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A TREATISE ON BREWING:

WHEREIN IS EXHIBITED

THE WHOLE PROCESS

OF

THE ART and MYSTERY of BREWING

the various sorts of

MALT LIQUOR;

WITH

Practical Examples upon each Species.

Together with the Manner of using the Thermometer and Saccharometer; elucidated by Examples,

AND

RENDERED EASY TO ANY CAPACITY,

IN BREWING

LONDON PORTER,	WINDSOR ALE.
BROWN STOUT,	WELCH do.
READING BEER,	WIRTEMBERG do.
AMBER,	SCURVY-GRASS do.
HOCK,	TABLE BEER, and
LONDON ALE,	SHIPPING do.

ALSO

General Instructions for the making of Malt;

WITH

TABLES OF THE NET DUTIES OF EXCISE ON STRONG AND TABLE BEER, PAYABLE BY COMMON BREWERS, IN TOWN AND COUNTRY.

BY

ALEXANDER MORRICE,
Common Brewer.

FOURTH EDITION.

LONDON:

PRINTED FOR SHERWOOD, NEELY, AND JONES (SUCCESSORS TO H. D. SYMONDS), PATERNOSTER ROW; AND DRING AND FAGE, TOOLEY STREET.

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INTRODUCTION.

IT may be neceſſary to give ſome Reaſon for laying theſe few Sheets before the Public.

I am convinced that the many raw, thin, pale Beers, which are in ſuch frequent Vend, whereby the Brewery is injured, and the Public not benefited, principally proceed from the Liquors being improperly taken, and from not extracting that Quantity of Saccharine from the Malt which it really poſſeſſes; it having, by an improper Proceſs in the firſt Inſtance, ſo locked up the Pores of the Malt, that no After-heat can

obtain the proper Extract. I am ſpeaking of partially locking it up, which is ſo frequently paſſed over unnoticed. Were the Goods entirely ſet, the moſt inattentive Obſerver could not avoid ſeeing it. Notwithſtanding which, the ignorant Brewer continues his uſual Proceſs, runs his accuſtomed Lengths for this (originally) good Malt, and thinks that he has extracted the whole Virtue from it. But this is not the Caſe; for, though hemay obtain the ſame Quantity of Liquid, it is very deficient in that Richneſs which he has a Right to expect, and which is ſo gratifying to the Palate.

When we ſpeak of the Bodies of Beers, Strength is not to be underſtood; but it is the Materiality of which is diſtinguiſhed upon the Palate, as light, heavy, thin, full, &c.

It

It is well known to every Brewer that the ſtrongeſt raw Wort produces no inebriating Effects upon the Drinker: from this we are convinced that Fermentation does not ſet at Liberty, but poſitively creates, the ſpirituous Parts of the Liquor.

Fermentation is, then, the grand Field where the experienced Brewer is to reap the golden Harveſt of his Labours: here is the moſt delicate Part of the Proceſs, as every Error in this Stage muſt be a Diminution of the Brewer's Profits.

We have ſome Brewers in the Town Brewery who ſuffer their Ales to lie eight or ten Days in the Tun, which frequently cauſes it to be Yeaſt-bitten: the Loſs which they ſuſtain in Quantity may alſo be calculated, from its lying ſo long expoſed in the Working Tun. I think it muſt be clear

to almoſt every practical Brewer, that this Mode of proceeding is improper upon many Accounts.

It muſt be viſible to every Perſon, that Fermentation carried beyond a certain Period defeats its own Purpoſe; for which Reaſon it requires the ſtricteſt Attention of the Artiſt. A Delay of an Hour or two in cleanſing it, when fit, will endanger your whole Gyle. To an improper Management in this important Part of the Proceſs, may be aſcribed the Quantities of thick, cloudy Beers, with which the Public are ſupplied; which champ in the Mouth more like Haſty Pudding than a well brewed Beverage.

By a prudent Management, and a Knowledge of that grand eſſential---*Fermentation*, there might be produced, without any Increaſe of Expenſe, a light, pleaſant Drink, agreeable

agreeable to the Eye, and pleaſant to the Taſte.

The Criſis when to cleanſe is of ſo delicate a Nature, that it is impoſſible to lay down any fixed Rule; but Obſervation will point it out clearly. The Brewer who, by his Attention to the Particulars here recommended, attains this deſired Perfection, ſecures to himſelf an unſolicited Extenſion of Trade, and renders thoſe enormous Expenſes that are daily incurred by Brewers to force a Trade unneceſſary: it will ſave them the Unpleaſantneſs of taking back Returns, or that moſt ruinous, though daily practiſed, Method of allowing the Victualler the Beer at a *far* reduced Price, to induce him to draw it. Again: Beer, by being well brewed, and giving univerſal Satisfaction, enables the Victualler to chuſe

his Cuſtomers, and only ſupply thoſe who pay him ready Money, or at a ſhort, regular Credit.

The Victualler thus ſupplied by ſuch a Brewer, will be enabled, every twenty-eighth Day as it comes round, to pay his Book up; and without being obliged to reſort to thoſe ſhuffling Methods of mixing Table and ſometimes Small Beer with the Porter, to leſſen their monthly Payment, and pay themſelves for thoſe Riſks which they are obliged to run, to get rid of an Article that is only marketable among thoſe who cannot buy without Credit; whereas the Vender of a good Article, not being compelled to reſort to theſe Riſks to get rid of his Commodity, will only truſt where his Money is ſure: he is thereby induced to pay every Attention to his Cellar, to keep up his own Credit,

Credit, and, conſequently, that of his Brewer.

I cannot here help obſerving, that Brewers are very frequently blamed when they are really blameleſs; for, if Beer is ever ſo well brewed, it is frequently ſpoiled by the Careleſſneſs, Obſtinacy, or Ignorance, of the Storehouſe Cooper. If even the beſt Beer be laid into the Cellar of a ſlovenly or lazy Victualler, from the Gullyhole in whoſe Cellar iſſues Stenches, it cannot fail of hurting the Beer materially. Many Victuallers ſuffer their Tap Tubs to be mouldy; and, when a Butt wants fining down, allow a Servant Girl to perform that Office; by whom the Bungs are left out, and many other Acts of Careleſſneſs committed, which tend to diſcredit the Brewer, although he does not deſerve it.

If

If Brewers would make a Point of encouraging Cleanlineſs among Victuallers, and pay a greater Attention to their Cellars, they themſelves would ultimately derive an equal Advantage from ſuch Caution.

PREFACE.

WHEN we conſider the wonderful Conſumption of Malt Liquor, the vaſt Revenue derived therefrom, and the Fortunes that have been made by Individuals; few Apologies, I truſt, are neceſſary for offering to the World a Treatiſe, tending to caſt a Light on the manufacture of a Beverage in ſuch general Uſe.

Perfectly aware of the Oppoſition every Work of this Kind, however modeſtly introduced to the Public, has to meet with, I purpoſe, notwithſtanding, to deſcribe the different Sorts of Beer, with the Manner of manu-

manufacturing them, from my own Knowledge; having been ſome Years a Common Brewer; and alſo from the Information of others, of whoſe practical Abilities I have a great Opinion.

It is a very common Remark, that almoſt every old Woman can brew. I admit, that Ale which is brewed at Noblemen's and Gentlemen's Houſes is generally cried up; but, look at and calculate the Expence they incur by the Party ſo brewing, through their not knowing the proper Heats that are neceſſary to extract the greateſt Quantity of Saccharine from the Malt, and conſequently they are giving *Goods* inſtead of *Grains* to the Pigs.

Again; the Length of Time (often being Years) before it is fit for Uſe, convinces me that the Heats are generally improperly taken,

and

and the Fermentation imperfect: the firſt is the Preliminary, and the ſecond the moſt eſſential, Part of the Proceſs. Though I ſhall give every Information in my Power of the Criterion by which to judge when a perfect Fermentation has taken Place, yet nothing but Practice and your own Obſervation can make you Maſter of it.

HISTORY

HISTORY

OF

THE LONDON BREWERY,

From the Beginning of King William's Reign to the Preſent Time.

IN the Beginning of King William's Reign, the Duty on Strong Beer, or Ale, was One Shilling and Threepence per Barrel: the Brewer then ſold his Brown Ale at Sixteen Shillings per Barrel, and the Small Beer (which was made from the ſame Grains) at Six Shillings per Barrel. Theſe were moſtly fetched from the Brew-houſe by the Cuſtomers themſelves, and paid for with ready Money; ſo that the Brewer kept but few Servants, fewer Horſes; had

had no Stock of Beers or Ales by him; no purchaſing of Leaſes of Public Houſes; no bad Debts; and but a trifling Number of Caſks; and his Money, conſequently, returned before he either paid his Duty, or for his Malt. The Victualler then ſold this Ale for Twopence per Quart.

Soon after, our Wars with France occaſioned further Duties on this Commodity. I think that in 1689 Ninepence more per Barrel was laid upon Strong Beer, and Threepence per Barrel on Small Beer. In 1690 the Duty was advanced Two Shillings and Threepence per Barrel on Strong Beer, and Ninepence per Barrel upon Small: and in 1692 an additional Duty of Ninepence per Barrel was laid on Strong Beer only. At this Period the Brewer raiſed his Price from Sixteen Shillings to Eighteen Shillings and Nineteen Shillings per Barrel; and the Victualler

Victualler raiſed his Price to Twopence Halfpenny per Quart.

Now we come to Queen Ann's Time, when, France diſturbing us again, the Malt Tax, the Duty on Hops, and that on Coals, took Place; and, as the Duty on Malt ſurpaſſed that on Hops, the Brewers endeavoured to eſtabliſh a Liquor wherein more of the latter ſhould be uſed: thus the drinking of Beer became encouraged, in preference to Ale. This Beer, when new, they ſold for Twenty-two Shillings per Barrel; and, at the ſame Time, advanced their Ale to Nineteen Shillings and Twenty Shillings per Barrel: but the People, not eaſily weaned from their heavy, ſweet Drink, in general drank Ale mixed with Beer from the Victualler at Twopence Halfpenny to Twopence Three Farthings per Quart.

The Gentry, now, reſiding in London more than they had done in former Times, introduced the Pale Ale, and Pale Small Beer, which they were habituated to in the Country; and either engaged ſome of their Friends, or the London Brewers, to make for them theſe Kinds of Drink; and Affluence and Cleanlineſs promoted the Delivery of them in the Brewer's own Caſks, and at his Charge. Pale Malt being deareſt, the Brewer, loaded with more Tax and Expence, fixed the Price of ſuch Small Beer at Eight Shillings and Ten Shillings per Barrel, and the Ale at Thirty Shillings per Barrel: the latter was ſold by the Victualler at Fourpence per Quart, and under the Name of Twopenny.

This little Oppoſition excited the Brown Beer Trade to produce, if poſſible, a better Kind of Commodity in their Way than heretofore

heretofore had been made. They began to Hop their Mild Beers more, and the Publican ſtarted three, four, or ſix Butts at a Time; but ſo little Idea had the Brewer, or his Cuſtomer, of being at the Charge of large Stocks of Beer, that it gave Room to a Set of monied People to make a Trade, by buying theſe Beers from Brewers, keeping them ſome Time, and ſelling them, when Stale, to Victuallers for Twenty-five Shillings or Twenty-ſix Shillings per Barrel.

Our Palates but ſlowly alter or reform. Some drank Mild and Stale Beer; others, what was then called *Three Threads*, at Threepence per Quart; but many uſed all Stale, at Fourpence per Quart.

On this Footing ſtood the Trade until about the Year 1722; when the Brewers conceived that there was a Mean to be

found preferable to any of theſe Extremes; which was, that Beer ſhould be well brewed, and, from being kept its proper Time, becoming Mellow (i. e. neither New nor Stale), it would recommend itſelf to the Public. This they ventured to ſell at Twenty-three Shillings per Barrel, that the Victualler might retail it at Threepence pe Quart.

Though it was ſlow, at firſt, in making its Way, yet, as it was certainly right in the End, the Experiment ſucceeded beyond Expectation. The labouring People, Porters, &c., found its Utility; from whence came its Appellation of *Porter*, or *Entire Butt*. As yet, however, it was far from being in the Perfection which we have ſince had it.

Porter

Porter was, at different Times, raiſed to Thirty Shillings per Barrel, where it remained till the Year 1799, and was retailed at Threepence Halfpenny per Quart; when, in Conſequence of Malt riſing in Price to from Four Pounds to Four Pounds Ten Shillings, and Five Pounds, per Quarter, and Hops from Four Pounds Ten Shillings to Seventeen Pounds, Eighteen Pounds, and Twenty Pounds per Hundred Weight, Porter was raiſed to Thirty-five Shillings per Barrel, and retailed at Fourpence per Quart. Ale, likewiſe, experienced a Riſe of from Forty-two Shillings to Fifty-two Shillings and Sixpence per Barrel.

The Prices ſtill keeping up, at a Meeting of the principal Porter Brewers it was raiſed to Forty Shillings per Barrel to the Victualler, and was retailed at Fourpence Halfpenny per Quart; but on the 19th of Janu-

ary,

ary, 1802, it was lowered to Thirty-five Shillings per Barrel.

Since this Time, alſo, it has ſuffered another Riſe, and is now (October 1805), to the Publican Forty-five Shillings per Barrel, and retailed at Fivepence per Quart.

Ale has alſo experienced a Riſe, but is not at any regular or fixed Standard; generally, in London, from Seventy-two to Eighty Shillings per Barrel; and is retailed at Eightpence and Ninepence per Quart.

Table Beer is alſo raiſed, and is from Twenty to Twenty-four Shillings per Barrel.

Hops were firſt brought into England from the Netherlands, in the Year 1524. They are firſt mentioned in the Engliſh Statute Book in the Year 1552, viz. in the fifth and ſixth of Edward the Sixth, Chapter

the

the fifth: and, by an Act of Parliament of the firſt of King James the Firſt, 1603, Chapter the eighteenth, it appears that Hops were then produced in Abundance in England.

The neat or clear Duty paid by the Common Brewer in the London Brewery in 1801, with the Malt Allowance deducted, was Five Shillings and Sevenpence Halfpenny per Barrel upon Strong Beer; and the clear Duty of Exciſe upon Table Beer was Two Shillings and Sevenpence Farthing; and upon Vi, or Small Beer, Tenpence.

The Duty paid now (October 1805) by the Brewer, with the Malt Allowance deducted, is, on Strong Beer, Nine Shillings and Twopence per Barrel; and on Table One Shilling and Tenpence. Vi is now ſubject to the ſame Duty as Table Beer.

ADVER-

ADVERTISEMENT TO THE FOURTH EDITION.

The rapid ſale of the three former Editions of this Treatiſe, affords the moſt undoubted proofs of its utility. The increaſing demand having called forth a new Edition, it has been thought proper to reviſe and correct the Work throughout, particularly with reſpect to the Duties on Malt Liquors, and the Expence of Licences to the Retailers, &c. &c. conſiderable alterations having taken place ſince the appearance of the former Editions.

In this Work the juſt proportion of the various Quantities of Malt, Hops, and other ingredients neceſſary for Brewing the different ſpecies of Malt Liquor, is given, as well as every other information that can poſſibly be requiſite for the young Common Brewer, or the Private Family, in Town or Country: and as it is that kind of knowledge which none but the experienced Common Brewer can communicate, the Author flatters himſelf that this Treatiſe will be found, for practice, ſuperior to any other hitherto publiſhed.

The following opinion of this Work is extracted from the *Monthly Review*, July 1802.

"The author, it muſt be acknowledged, writes like an honeſt as well as an intelligent Brewer; and we have no doubt that this book will prove uſeful to thoſe readers for whom it is calculated. He has alſo prefixed a Hiſtory of the London Brewery, which muſt be intereſting to every deſcription of readers."

The *Anti-Jacobin Review*, Auguſt 1802, ſays, "To all thoſe who wiſh for information on the ſubject of Brewing, Mr. Morrice has ſupplied an uſeful and a copious fund: he has alſo prefixed a Hiſtory of the London Brewery, which muſt be intereſting to every deſcription of readers."

A TREATISE

A

TREATISE ON BREWING,

&c.

AS I intend this Publication for young Brewers, and for the Benefit of Country Gentlemen, it may not be amiſs, firſt, to give them the Outline of a Brewhouſe, with its Utenſils; together with ſome Hints on the Subject of the Utenſils uſed, which are—

The Liquor Back, Copper Back, Copper, Shutes, Jack Back, Backs or Coolers, Maſh Tun, Under Back, Working Tuns, Stillions, Caſks, and Vats.

The Liquor Back ſhould be placed ſufficiently high, to command the Copper, and much expoſed to the ſoftening Virtue of the Air. This I conſider as particularly neceſſary, where you are compelled to uſe hard Water.

The Copper ſhould be placed high enough to command every other Utenſil in the Brewhouſe, all of which you ſhould be particularly careful to keep clean and ſweet; for if the Fox, or Muſt, gets into your Utenſils, you will be much troubled to remove the taint.

If, after having brewed, the Backs, &c. are likely to be ſtill for ſome Days, cauſe them to be well liquored down, and limed, which will prevent any Acidity remaining in the Wood. In Summer they ſhould, in Addition, be filled with Water, which, by keeping

ing the Wood ſwelled, will prevent the Veſſels from leaking.

I muſt here caution you to keep a watchful Eye upon your working Tuns; for it is generally admitted that there are not greater Thieves in a Brewhouſe than they are: many, being partly under Ground, render your ſearch for the Leak fruitleſs.

MALT.

Of making Malt.

AS this Article ſtands firſt in the Brewery, I ſhall give you the Directions of a Maltſter of eminence for the making of it, which are as follow:

The Barley muſt be put into a leaden or tiled Ciſtern, that holds five, ten, twenty, or more, Quarters; it is then to be covered with Water, four or ſix Inches above the Barley, to allow for its ſwelling: here it is to lie five or ſix Tides (as the Maltſter calls it), reckoning twelve Hours to the Tide, according to the State of the Barley in Body or dryneſs; for that which comes off Clay,

or

or has been waſhed or damaged by Rains, requires leſs Time than the drier Grain, that was inned well, and grew on Gravels, or Chalks; the ſmooth plump Corn imbibing the Water kindly, whilſt the lean and ſteely Barley will not do it ſo naturally. To know when it is enough, you muſt take ſome of the Corns, endwiſe, between the Fingers, and gently cruſh them: if they are in all Parts mellow, and the Huſks open, or ſtart a little from the Body of the Corn, then it is enough. The Nicety of this is a material Point; for if it is infuſed too much, the Sweetneſs of the Malt will be greatly taken off, and yield the leſs Spirit; and, of courſe, will cauſe a Deadneſs and Sourneſs in Beer or Ale in a ſhort Time, for the Goodneſs of the Malt contributes much to the Preſervation of all Ales and Beers.

Then the Water muſt be drained very well from it, when it will become equal and better upon the Floor, which may be done in twelve or ſixteen Hours in temperate Weather, but in cold, nearly thirty Hours. After being taken from the Ciſtern it muſt lie thirty Hours, for the Officer to take his Gauge, who allows four Buſhels in the Score for the Swell here, or in the Ciſtern: then it muſt be worked Night and Day, in two or three Heaps, according to the Weather's being cold or hot; and muſt be turned, every four, ſix, or eight Hours, the outward Part inwards, and the bottom upwards, always keeping a clear Floor, that the Corn which lies next to it may not be chilled. As ſoon as it begins to come, or ſpire, turn it every three, four, or five Hours, as was done before, according to the temper of the Air, which greatly governs this Management; and as it comes, or works

works more, the Heap muſt be ſpread wider, and thinned, in order that it may cool. Thus it may lie and be worked upon the Floor in ſeveral Parallels, two or three Feet thick, ten or more Feet broad, and fourteen or more Feet in length, to chip or ſpire, but not too much, nor too faſt; and, when it is *come enough*, it is to be turned twelve or ſixteen Times in twenty-four Hours, if the Seaſon is warm, as in March, April, or May. When it is fixed, and the Root begins to be dead, it muſt be thickened again, and often carefully turned and worked, that the Growth of the Root may not revive: this is better done with the Shoes off than on.

Here the Workman's Art and Diligence are particularly tried, in keeping the Floor clear, and turning the Malt often, that it may neither mould nor acre-ſpire; that is, that the Blade does not grow out at the oppoſite

End of the Root; for if it does, the Flour and Strength of the Malt are gone, and nothing left behind but the Acre-ſpire, Huſk, and Tail.

When it is at this Degree, and fit for the Kiln, it is a Practice often to put it into a Heap, and let it lie twelve Hours, before it is turned, to heat and mellow, which will much improve the Malt, if done in Moderation; and after that Time it muſt be turned every ſix Hours within the twenty-four: if it is overheated, it will become like Greaſe, and be ſpoiled, or cauſe the Drink to be unwholeſome.

When this Operation is over, it muſt be put on the Kiln to dry, and there remain four, eight, or twelve Hours, according to the Nature of the Malt; for the Pale Sort requires

requires more Leiſure, and leſs Fire, than the Amber or Brown Sorts.

Three Inches thick was formerly thought a ſufficient depth for the Malt to lie upon the Hair-cloth; but, now, ſix is allowed, often to a Fault. Fourteen or ſixteen Feet ſquare will dry about two Quarters, if the Malt lies four Inches thick; and it ſhould be turned every two, three, or four Hours; keeping the Hair-cloth clear.

The Time occupied in preparing it from the Ciſtern to the Kiln is uncertain, according to the Seaſon of the Year: in moderate Weather, three Weeks are frequently ſufficient.

If the Exciſeman takes his Gauge on the Floor, he allows ten in the ſcore; but he ſometimes gauges in the Ciſtern, Couch, Floor, and

and Kiln; and where he can make moſt, there he fixes his Charge.

When the Malt is dried, it muſt not cool upon the Kiln, but be directly thrown off; not into a Heap, but ſpread wide in an airy Place till it is thoroughly cool: then put into a Heap, or otherwiſe diſpoſed of.

There are ſeveral Methods uſed in drying of Malts, as the Iron-plate Frame, and the Tile Frame, which are both full of little Holes; the Braſs-wired and Iron-wired Frames, and the Hair-cloth. The Iron and Tiled ones were chiefly invented for drying of Brown Malts, and ſaving of Fuel; for theſe, when they are thoroughly hot, will make the Corns crack and jump, by the Fierceneſs of the Heat; ſo that they will be roaſted or ſcorched in a little Time. After the Malt is off the Kiln, ſome will ſprinkle Water

Water over it, to plump the Body of the Corn, and make it take the Eye, that it may meet with the better Market. But if ſuch Malt is not uſed quickly, it will ſlacken, and loſe its Spirits in a great Degree; and, perhaps, in half a Year, or leſs, may be taken by the Weevils, and ſpoiled. Such haſty Dryings or Scorchings are alſo apt to bitter the Malt, by burning its Skin; and therefore theſe Kilns are not ſo much uſed now as formerly.

The Wire Frames, indeed, are ſomething better; yet they are apt to ſcorch the outward Part of the Corn, which cannot be got off ſo ſoon as the Hair-cloth admits of; for theſe muſt be ſwept, when the other is only turned at once. However, the laſt three Ways are now in much requeſt for drying Pale and Amber Malts, becauſe their Fire may be kept with more Leiſure, and the Malt

Malt more gradually and truly dried; but, by many, the Hair-cloth is reckoned the beſt of all.

Malts are dried with ſeveral Sorts of Fuel, as the Coke, Welch Coal, Straw, Wood, Fern, &c.; but the Coke is reckoned, by moſt, to exceed all others, for making Malt of the fineſt Flavour, and of a pale Colour; becauſe it ſends forth no Smoke to affect it with an offenſive *twang*, which Wood, Fern, and Straw, are apt to do, in a greater or leſs Degree.

There is a Difference in what is called Coke, the right Sort being large Pit-coal, charked, or burned, in ſome Meaſure, to a Cinder, till all the Sulphur is conſumed and evaporated, which is called Coke; and this, when properly made, is the beſt of all other Fuels: but, if there are any Cinders among it

it not thoroughly cured, the Smoke of theſe is capable of doing Damage; and this happens too often by the Negligence or Avarice of the Coke-maker.

There is another Sort, which is by ſome, though wrongly, called Coke; and rightly named Culm, or Welch Coal, from Swanſea, in Glamorganſhire: it is of a hard, ſtony Subſtance, in ſmall Bits, reſembling a ſhining Coal, and will burn without Smoke; and which, by its ſulphureous Effluvia, caſts a moſt excellent Whiteneſs on all the outward Parts of the Body of the Grain.

Straw is the Fuel next in ſweetneſs: Wood and Fern are the worſt of all.

I have known ſome to put a Peck or more of Peaſe with every five Quarters of Barley, to be made into Malt, and they greatly mellow

mellow the Drink: Beans will do ſo, likewiſe; but they will not come ſo ſoon, nor mix ſo conveniently with the Malt as the Peaſe will.

There is an Abuſe ſometimes committed by a neceſſitous Maltſter, who, to come by Malt ſooner than ordinary, makes Uſe of Barley before it is thoroughly ſweated in the Mow: it will then never make right Malt, but will be ſteely, and not yield a due Quantity of Wort. I knew it was once done by a Perſon who thraſhed the Barley immediately from the Cart, as it was brought out of the Field; but they who uſed it in Malt ſuffered greatly, for it was impoſſible that it could be good, not having thoroughly chipped or ſpired on the Floor; which cauſed the Malt, when the Water was turned into the Maſh Tun, to ſwell up and abſorb the Liquor, and not to return its due Quantity again, as true Malt will: nor

was

was the Drink of this Malt ever good in the Barrel, but remained a raw, inſipid Beer, beyond the Art of Man to cure; becauſe (like Cider made from Apples directly off the Tree, that never ſweated out their phlegmatic crude Juice in the Heap) a natural Liquor cannot be produced from ſuch unnatural Management. Barley, certainly, is not fit to be made into Malt till it is fully mellowed and ſweated in the Mow, and the Seaſon of the Year is ready for it: without both which requiſites there can be no Aſſurance of good Malt.

Several Inſtances of this untimely or injudicious Method of making Malt I have known to happen, which have been the occaſion of great Quantities of bad Ales and Beers: ſuch Malt, in conſequence of its retaining ſome of its Barley or crude Nature, or the Seaſon of the Year not being cold enough to admit of its

its regularly and temperately working on the Floor, is not capable of producing a true Malt, but will occaſion the Drink to ſtink in the Caſk, inſtead of growing fit for Uſe; it not having its genuine Malt Nature to cure and preſerve it, which all good Malts contribute to as well as the Hop.

Oats, malted in the ſame Manner as Barley, will make a weak, ſoft, mellow, and pleaſant Drink; but Wheat, ſo treated, will produce a ſtrong, heady, nouriſhing, well-taſted, and fine Liquor.

To know good from bad Malt.

This is a Matter of the greateſt Importance to all Brewers, both public and private. It is abſolutely neceſſary to endeavour to be Maſter of this Knowledge, ſo as to judge truly between good and bad Malt, without

without which you lie very much expoſed to Impoſition.

The beſt Inſtruction I can give, is, to examine if it has a round body, breaks ſoft, is full of flour all its Length, ſmells well, and has a thin Skin; next to chew ſome of it in your Mouth, and if you find it ſweet and mellow, then it is good. If it is hard and ſteely, and retains ſomething of a Barley Nature, it has not been rightly made, and will weigh heavier than that which has been properly malted.

The foregoing Hints are for the purchaſing of it. I ſhall, in its proper Place, ſhew how to aſcertain the real Value of every different Parcel, by practical Examples upon the Saccharometer.

Of the Nature and Uſe of Pale, Amber, and Brown Malts.

The Pale Malt is the floweſt and ſlackeſt dried of any; and where it has had a leſſer Fire, a ſufficient Time allowed it on the Kiln, and a due Care taken of it, the Flour of the Grain will remain in its full Quantity, and thereby produce a greater Length of Wort than the Brown high-dried Malt; for which Reaſon it is ſold for Two, Three, and Four Shillings per Quarter more.

This Pale Malt is, alſo, of all others, the moſt nutritious Sort to the Body; it being, in this State, the moſt ſimple, and neareſt to its original Barley-corn; and it will retain an alkaline and balſamic Quality much longer than the Brown Sort.

The

The tender drying of this Malt brings its Body into ſo ſoft a Texture of Parts, that it is cuſtomary with Brewers (if they can) to brew it with Spring or Well Waters, whoſe hard and binding Bodies are thought to agree beſt with this looſe-bodied Malt, either in Ales or Table Beer, which permit and require hotter Liquors than the Brown Malt can bear.

Amber-coloured Malt is that which is dried in a medium Degree, between the Pale and Brown; and is much in Uſe, being free from either Extreme. Its Colour is pleaſant, its Taſte agreeable, and its Nature wholeſome; which make it preferred by many as the beſt of Malts. This, if uſed alone (which is ſeldom done), may be brewed with ſoft or hard Water; and you muſt always remember, that the more Heat there is in the Malt, the leſs is required in the Liquor.

Brown Malt is the ſooneſt and higheſt dried of any, even till it is ſo hard, that it is difficult to bite ſome of its Corns in two; and is frequently ſo cruſted or burnt, that the farinaceous Part loſes a great Deal of its eſſential Salts and vital Property, which frequently deceives the ignorant Brewer, who hopes to draw as much Wort from this as from Pale and Amber Malts.

As it is much impregnated with the fiery fumiferous Particles of the Kiln, its Drink ſooner becomes ſharp and acid than that made from the Pale or Amber Malts, if they are all fairly brewed: for this Reaſon, the London Brewers moſtly uſe the Thames or New River Water to brew this Malt with, for the Sake of its ſoft Nature, which agrees better with the harſh Qualities of it than any of the Well, or any other hard Sorts.

HOPS.

HOPS.

AS they conſtitute one of the principal Ingredients uſed in Malt Liquor, it may be both proper and neceſſary that I ſhould give you ſome Strictures upon them.

To give an Account of the Cultivation, Picking, Bagging, &c., of Hops, formed no Part of my Intentions with reſpect to this Treatiſe; I ſhall therefore only give you ſome Hints on the Obſervations which I have made in the practical Uſe of them.

Hops, I believe, are generally admitted, like moſt other Vegetables, to be a Compound of Water, Salt, Oil, and Earth.---

When we pauſe for a Moment on the thus analyzed Article before us, we are to conſider what are the Eſſentials of theſe component Parts that we are to ſtrive to preſerve, and what to reject. When I have conſidered the general Make of Coppers, I have found myſelf much at a Loſs to determine, in my own Mind, whether a quick Fire and a ſhort Proceſs were beſt, or a long Proceſs with a more moderate Fire, to prevent the Loſs of certain eſſential Oils.

A Friend of mine (Mr. Blunt), whoſe practical Knowledge of Extracts is univerſally admitted, prefers a ſhort or quick Proceſs to a long one. I make Choice of a Dome Copper, as the finer and more eſſential Oils, poſſeſſing a greater Volatility, are more ſubject to Evolation, whereas the more auſtere are left: this the Dome Copper prevents; for when the finer Oils meet with a Reſiſtance,

Reſiſtance, they are driven downwards, and muſt re-unite with the Wort.

The Quantity of Oil in Hops is conſiderable; the finer Part of an agreeable Fragrance and great Volatility. They are endued with fine, oderiferous, aromatic Spirits, as appear by the Senſe of ſmelling on being rubbed, which are eaſily communicated to any Liquid; and they are ſo tender, that they are not to be retained without being rammed and bagged, to prevent the Attraction of the Air.

The Care in bagging and keeping is of the greateſt Importance: they ſhould be kept in a dry, cloſe Loft, and the Bags laid upon each other, though many pitch them endwiſe. If, in brewing, Part of a Bag or Pocket be left unuſed, let the upper Part of the Bag be covered cloſe over the Remain-

der; and put ſome heavy Weight upon it, to keep the Air from them, which will, otherwiſe, carry off their more valuable Qualities. New Hops ſhould not be uſed alone, but mixed, in equal Proportion, with old ones.

It is the valuable Properties of the Hop which give to Malt Liquor that pleaſant Taſte and Smack upon the Lips after it is drunk: they alſo contribute very much to the Preſervation of the Beer.

The total Amount of the Duty on Hops, throughout the Kingdom, for the Year 1801, was Two Hundred and Forty-one Thouſand, Two Hundred and Twenty-ſeven Pounds, Eight Shillings, and Five Pence Three Farthings.

PORTER.

PORTER.

AS Porter, in Point of Conſumption, generally bears the Priority, I ſhall commence with it.

Under this Head I muſt take Notice of the commonly received Opinion, that Thames Water is abſolutely neceſſary to the brewing of good Porter. This is a miſtaken Idea; as ſome of our principal Brewers uſe the New River Water.

Richardſon, in his Experiments on the Gravity of Water, ſhews that the ſpecific Gravity of Thames Water is 1000.3, and its Spiſſitude 1000.182; and the Gravity of the

the New River Water 1000.3, and its Spiſſitude 1000.344.

The Expenſe and Labour which this ſcientific Gentleman has beſtowed on the Subject, by his nice Calculations, and liberal, fair Inveſtigation of it; and for the Inſtrument (viz. his Saccharometer) he has made, by which the Brewery may derive an unbounded Advantage, and obtain that Rank among the Sciences which the Magnitude of its Object entitles it to, give him a juſt Title to the Thanks of every Friend to Improvement; and although my Inſtrument would not permit me to make the nice Calculations which Mr. Richardſon's have attained, they are ſufficiently ſo to convince me that his are juſt, and to the greateſt requiſite Nicety.

Much praiſe is due to Mr. Richardſon for his ſcientific Reſearches, and Mode of applying

ing the Hydrometer to the Purpoſes of the Brewery; but other Inſtruments are now made on an improved Conſtruction, which are more generally approved.

The Uſes of the Saccharometer and Thermometer in the Brewery are ſo various, and of ſuch Importance, that any Inſtruments of this Kind, however inaccurate, are better than none; but it muſt be allowed that thoſe which are moſt ſimple in their Conſtruction, and the Application of which will conſequently be moſt eaſily learnt, are beſt adapted for the Brewery.

Since the Uſe of theſe Inſtruments is now ſo common, and their Utility ſo generally acknowledged, it is unneceſſary to urge the ſuperior Advantages obtained by the Brewer who makes Uſe of them over one who does not.

Having

Having brewed a Beer of the ſame Quality as that of your Neighbour's, or of ſuch a Strength as gives Satisfaction to your Cuſtomers, you may in future, by uſing the Saccharometer, enſure a good Commodity, always of an uniform Degree of Strength, inſtead of boiling it by Time, or other uncertain fallacious Methods. If you have a good Parcel of Malt, you may avail yourſelf of it by increaſing your Quantity of Worts without diminiſhing your ſtandard Denſity; and ſhould you have a bad Parcel of Malt, you will know how to ſave your Credit by boiling it down until the required Gravity is obtained.

In the Courſe of the Work, many other Advantages, of no leſs Magnitude, will be mentioned as they occur.

Suppoſe your Brewing conſiſts of ten Quarters of Malt, in the following Proportions:

4 Herts

4 Herts Pale
3 Herts Amber
3 Weſt Country Brown

—

10 Quarters Malt.

Take Care that it is ſweet and well malted; then ſee it well ground, that every Corn be broken ſufficiently to admit the Liquor.

Take the firſt Heat of your Liquor at 160 Degrees by the Thermometer (thoſe made by Meſſrs. Dring and Fage, No. 20, Tooley Street, Southwark, with a blind Scale and Index, are found to be very correct and uſeful); maſh one Hour, reſerving ſome dry Malt to ſprinkle over the Goods while ſpending: if you have a cover to your Maſh Tun, ſo much the better. After remaining anHour, ſet Tap, taking Notice what the Heat of your Extract is, and alſo whether fine.

As

As theſe Obſervations muſt in ſome Meaſure guide you in your after Proceſs, I ſhall, in the firſt Place, ſuppoſe that the Wort comes down, to your Satisfaction, quite bright: this, you will obſerve, is the firſt raw Wort, not having paſſed the Copper.

When the Tap is quite ſpent, gauge the Content of your Underback, and fill one of your Aſſay Jars from it; then weigh your Wort by the Saccharometer (the Particulars of which are given in a Plate at the End of the Work). Note down, in a Book to be kept for that Purpoſe, the Quantity of Worts in your Underback, and the Weight by the Saccharometer. Now weigh out your Hops (eighty Pounds), about half old and half new, good Brown.

I ſuppoſe your Copper charged again with Liquor, which, after having turned off below,

low, turn over at 161 Degrees; maſh for three Quarters of an Hour, and cover up your Tun. Get your firſt Wort into the Copper with your Hops; boil it ſharply for three Quarters of an Hour: and, a ſhort Time before you turn out into your Backs or Coolers, put into the Copper fourteen Pounds of Sugar, and fourteen Pounds of Leghorn Juice, keeping the Copper conſtantly rouſing till diſſolved, and all the Wort out; then charge your Copper for your third and laſt Liquor.

After the ſecond Liquor has ſtood an Hour upon the Goods, ſet Tap; and, when entirely ſpent, gauge the Underback, noticing what Quantity you have: weigh your Wort, as before, and get it up into your Copper Back.

You will now be able to judge how much Wort you have from both Liquors, and can tell

tell exactly how much it will be neceſſary to turn over for the third, which do at 150 Degrees. Let your ſecond Wort into the Copper, and boil it with the ſame Hops for one Hour; then turn it out. Maſh your third one Hour, and after being on the Goods one Hour, ſet Tap; and, when ſpent, proceed as before. Boil it till you obtain your Quantity, which you may do to the greateſt Nicety; after which, turn it out into your Backs, where it muſt remain thinly ſpread till cool enough to pitch the Tun, which do at 64 Degrees; but always take Care that your Yeaſt be good, and that it bites.

Cleanſe the ſecond Day after brewing, as near 80 Degrees as you can. I adviſe you to uſe in your Tun a good correct Thermometer, with a flat Bore, as it is eaſier to be ſeen than a round one. Uſe at cleanſing a Quarter of a Peck of Flour, and two large Handfuls

Handfuls of Salt, which will aſſiſt the Working: rouſe it thoroughly at the ſame Time.

Take care to keep the Caſks conſtantly filling when upon the Stillions; and, when it nearly ceaſes to work, top it up with bright Beer: ſtart about ten Hours after.—In proper Time bung it up for Uſe.

If the firſt raw Wort does not come down fine, take your ſecond Liquor rather higher than is here directed: after this, Small Beer is to be brewed from the ſame Goods (the Directions to do which I ſhall give you hereafter); and, if your Copper is large enough, boil your three raw Worts at twice.

You might uſe three Pounds of Cocculus Indicus Berry, ground fine, and four Pounds of Fabia Amara (theſe, if uſed, muſt be in

the Copper) : the former gives an inebriating Quality, which paſſes for Strength of Liquor.

The Fabia Amara (or Bitter Bean), which is but little known by Brewers in general, is by far the moſt wholeſome Subſtitute for Hops, it having a very pleaſant Bitter ; and it is alſo, in ſome Meaſure, a Subſtitute for Malt.

Quaſſia, ground ſmall, is a great ſtomachic, and wholeſome ; but is ſo powerful in its Nature as to leave a very unpleaſant Taſte in the Mouth long after the Liquor is drank.

I would wiſh you particularly to obſerve, that when theſe Ingredients are made Uſe of,

of, it is with a View of ſaving Malt and Hops, at a Time when they fetch the high Price they have lately done.

I purpoſe to illuſtrate and exemplify the foregoing, by giving you the whole Proceſs of two or three Brewings, with the Manner of my proceeding at the Time; for which Purpoſe I have always kept a Book of the different Brewings, and Obſervations thereon, from January 1793.

EXAMPLE I.

Wedneſday, January 16th, brewed for Porter: commenced at five o'Clock in the Morning; Thermometer in the Air 34 Degrees.

Kinds of Malt:

3 Weſt Country Pale
6 Herts Pale
8 Herts Brown
8 Herts Amber

25 Quarters.

	Cwt.	Qrs.	lbs.
Malt, 25 Quarters			
Hops	1	2	0
Cocculus Indicus Berry	0	0	6
Leghorn Juice	0	0	30
Porter Extract	0	0	4

Firſt great Copper charged thirty-ſix Inches, i.e. fifty-two Barrels and ſeven Gallons.

Firſt Liquor 155 Degrees, all turned down: maſh one Hour. Set Tap at ſeven o'Clock. Tap, 137 Degrees; Gravity, twenty-one Pounds and a Half per Barrel.

Second

Second great Copper charged fifty Inches, i.e. thirty-ſix Barrels, one Firkin, and ſeven Gallons.

Second Liquor 160 Degrees, all turned down. Tap, 146 Degrees; Gravity, ten Pounds and a Half per Barrel.

Firſt Wort into the Copper thirty-four Inches, i.e. fifty-one Barrels and two Gallons.

Third ſmall Copper, with Liquor charged full, i.e. fifty-nine Barrels and one Gallon.

Third Liquor 150 Degrees, all turned over: maſh one Quarter of an Hour. Tap, 132 Degrees; Gravity, three Pounds and a Quarter per Barrel.

Second Wort into the Copper twenty-seven Inches, i.e. sixty-two Barrels, one Firkin, and six Gallons. Boiled one Hour and a Half; came out thirty-four Inches, i.e. fifty-four Barrels, one Firkin, and seven Gallons. Pitched at 64 Degrees: cleansed on Friday, eighty-eight Barrels.

	B	F
Started into a Vat, on Saturday -----	88	0
Drawings off from Stillions, &c.-----	1	2
	89	2

EXAMPLE II.

Saturday, October 26th, brewed for Porter: commenced at five o'Clock in the Morning; Thermometer in the Air 39 Degrees.

Kinds

Kinds of Malt:

11 Herts Pale
7 Herts Amber
7 Weſt Country Brown

25 Quarters.

	Cwt.	Qrs.	lbs.
Malt, 25 Quarters			
Hops	1	2	0
Cocculus Indicus Berry	0	0	6
Leghorn Juice	0	0	30
Porter Extract	0	0	4

Firſt great Copper charged thirty-ſix Inches, i.e. fifty-two Barrels and ſeven Gallons.

Firſt Liquor 154 Degrees, all turned down: ſet Tap at ſeven o'Clock. Tap, 136 Degrees; Gravity, twenty-two Pounds $\frac{74}{100}$ per Barrel.

Second great Copper charged forty-eight Inches, i.e. thirty-eight Barrels, two Firkins, and ſix Gallons.

Second Liquor 164 Degrees, all turned down. Tap, 148 Degrees; Gravity, ten Pounds $\frac{70}{100}$ per Barrel.

Firſt Wort in the Copper thirty-two Inches; boiled one Hour, and came out thirty-ſix Inches. Gravity, nineteen Pounds $\frac{1}{10}$ per Barrel.

Third Liquor charged ſmall Copper full, i.e. fifty-nine Barrels and one Gallon.

Third Liquor 154 Degrees, all over. Tap, 133 Degrees; Gravity, four Pounds $\frac{1}{3}$ per Barrel.

Second Wort in the Copper twenty-ſeven Inches: boiled two Hours, and came out thirty-

thirty-ſix Inches. Gravity, nine Pounds $\frac{1}{10}$ per Barrel.

Pitched Tun at 64 Degrees; cleanſed at 70 Degrees of Heat. Gravity of the Beer, in that State, fourteen Pounds $\frac{1}{4}$ per Barrel.

Cleanſed, on the 28th, eighty-ſeven Barrels and one Firkin. Started into twenty-nine Butts.

Having given you two Examples on the practical Part of the Proceſs of brewing Porter, which have, from the Commencement to the End, anſwered our moſt ſanguine Hopes, I ſhall now preſent you with the Particulars of a Brewing, which, by bad Management, remained in the Tun ten Days before it was fit to cleanſe, and the Mode which I adopted to prevent the entire Gyle from being loſt.

Wedneſday,

Wednesday, September the 18th, brewed Porter: commenced at five o'Clock in the Morning; Thermometer 60 Degrees in the Air.

Kinds of Malt:

13 Herts White
6 Herts Amber
6 Herts Brown

25 Quarters.

	Cwt.	Qrs.	lbs.
Malt, 25 Quarters			
Hops	1	2	4
Sugar	0	0	30
Cocculus Indicus Berry	0	0	6
Leghorn Juice	0	0	30
Porter Extract	0	0	4

First great Copper charged fifty-two Barrels and seven Gallons: Liquor 156 Degrees; all turned over. Mashed one Hour: set Tap

Tap at ſeven o'Clock. Tap, 137 Degrees; Gravity, twenty-five Pounds, $\frac{36}{100}$ per Barrel.

Second Copper charged thirty-eight Barrels: Liquor all turned down at 162 Degrees. Maſhed one Half of an Hour; ſet Tap at Half paſt eleven o'Clock. Gravity, eleven Pounds $\frac{26}{100}$ per Barrel.

Firſt Wort in the Copper thirty-two Inches: boiled one Hour; came out thirty-ſix Inches.

Little Copper charged full, and eight Inches, i.e. ſixty-two Barrels: Liquor turned down at 150 Degrees; maſhed a Quarter of an Hour. Tap, 144 Degrees; Gravity, five Pounds $\frac{65}{100}$ per Barrel.

Second Wort boiled two Hours, and came out thirty-five Inches.

This

This Wort was ſpread in the Cooling Backs: Part of the firſt, at pitching the Tun, I let down at 72 Degrees of Heat; the Remainder of the firſt, and the Whole of the ſecond Back, at 64 Degrees. I left the third to be let down by a Servant, who delayed doing it till the Morning. The Part which was let down being in a large Square, and thinly ſpread, would not work at all; and his letting the Remainder down quite cold, made the Whole a *Corpus Mortuum*, or vapid Maſs.

After having waited many Hours without finding that the Yeaſt had bit, I proceeded to nail up Hop Bags round the Tun, and made a Fire in the Tun Room, but found no Alteration. I then cauſed the vapid Yeaſt to be ſkimmed cloſe off, heated a little of the Wort, and pitched again with freſh Yeaſt; after which I put in Half a Pound of Bay Salt,

Salt, and a Quarter of a Peck of Bean Flour; rouſed it well from the Bottom, and filled two Firkins of ſcalding Liquor, bunged down, which I lowered into the Square. This ſet it in action; and, upon the Morning of Friday the 28th, it cleanſed eighty-four Barrels and three Firkins, which turned out good Beer, and gave great Satisfaction.

BROWN STOUT.

THIS Liquor, ſince the Riſe in the Price of Malt and Hops, has compelled Brewers to run the uncommon Lengths they have; for Porter has come into very general Uſe: I ſhall therefore give you the neceſſary Inſtructions for brewing it.

As I recommend but two Liquors, and one boiled Wort for your ſtrong, your Goods will poſſeſs too much of the Virtue of the Malt to brew Vi or Small Beer from; I ſhall therefore adviſe you to cap on a Quarter of freſh Malt, and brew Table Beer after it: not that I approve of capping on, convinced that you have not the whole Virtue

Virtue from the Malt; but the Exciſe will not admit of your brewing Strong and Table Beer from the ſame Goods without it.

Commence brewing early, as it will be neceſſary to liquor out all your Utenſils with hot Liquor. Notice the Heat of the Atmoſphere, which had beſt be done by leaving a Thermometer expoſed all Night.

I ſhall ſuppoſe that you brew from twenty Quarters of Malt.

Kinds of Malt:

12 Herts Brown
4 Herts Amber
4 Herts White

20 Quarters.

Malt

	Cwt.	Qrs.	lbs.
Malt, 20 Quarters			
Hops	2	0	0
Cocculus Indicus Berry	0	0	4
Sugar	0	0	28
Fabia Amara	0	0	6

Let your Malt be well ground. Charge your Copper thirty Barrels, which will enable you to ſpare the Quantity that the Malt will ſuck up, without endangering your Copper.

Turn your firſt Liquor down at 168 Degrees, being careful that the Men, with their Rakes, ſtir it well from the Bottom before they uſe their Oars, to prevent the Goods ſetting.

Maſh one Hour and a Half, and let it ſtand the ſame Time upon the Goods; then

ſet

ſet Tap, making the ſame Obſervations, as to the Heat and Denſity, which you did in the Porter.

You will, of courſe, have charged your Copper full of Liquor for your next raw Wort. After the Tap is ſpent, gauge your Underback, and you will be able to give a near Gueſs how much Liquor you will want for your ſecond Wort.

Recollect that the Malt will not require more, as the freſh Liquor will only diſlodge what it had imbibed of the former; therefore you will only calculate what you will loſe by boiling, and the Hops.

Turn your ſecond Liquor over at 174 Degrees: maſh one Hour, and let it ſtand upon the Goods one Hour and a Quarter. Set Tap, making your Obſervations as before.

Charge your Copper fifty Barrels, for Table Beer. Get your firſt Wort into your Copper Back; weigh out your Hops, two Hundred Weight of the beſt Brown. When your ſecond Tap is ſpent, get it into the Copper Back: turn your third Liquor over for Table Beer, having capped on a Quarter of Amber Malt. Turn your Liquor down at 170 Degrees: maſh one Hour and a Quarter, and let it ſtand upon the Goods the ſame Time. Set Tap, making your Obſervations as directed.

When in the Copper, put in fourteen Pounds of Spaniſh Juice juſt before turning out. Boil your ſtrong Wort two Hours, as hard as you can, putting in the Articles before mentioned about a Quarter of an Hour before you turn it out. Endeavour to get about two Barrels and a Half, or rather more, per Quarter.

From

From the Time of putting in the Articles keep ſtirring and rouſing the Copper from the Bottom, to prevent the Sugar from damaging it, till you turn out. Pitch your Tun at 66 Degrees, uſing a Gallon of lively Yeaſt: cleanſe the ſecond Day after brewing, as near 80 Degrees as you can; uſe ſome Flour and Half a Pound of Salt, rouſing the Tun well. Keep topping the Beer up well while working in the Caſks; and, when done, fill up with fine Beer: when ſettled, bung it down to go out.

We left the Table Beer Wort juſt turning out from the Copper, having uſed in it the Hops after the ſtrong Wort. Pitch your Tun at 66 Degrees; cleanſe it the next Day at 72 Degrees. At cleanſing, two Pounds of Ginger, and ſome Flour and Salt, muſt be put into the Tun: rouſe it well a little before.

Your Caſks I ſhall hope you have been particularly careful of: keep filling them up till the Beer has nearly left off throwing up; then top up with bright Beer: leave all till the next Day, and bung up. Before you ſend the Beer out, put a little Finings into every Caſk.

N. B. The ſame Hops ſerve for Table Beer.

READING BEER.

THIS is a Beer much praiſed by many Perſons; I ſhall therefore deſcribe the Nature and Proceſs of brewing it.

Kind of Malt:

20 Quarters all Pale.

	Cwt.	Qrs.	lbs.
Malt, 20 Quarters			
Hops	1	3	0
Grains of Paradiſe	0	0	6
Coriander Seed, ground	0	0	10
Sugar	0	0	28
Indian Bark	0	0	3

Take your firſt Liquor at 175 Degrees.—Be careful that you do not ſet your Goods;

and let it on gently, uſing your Rakes. It may remain on the Goods two Hours. Set Tap, making your Obſervations. Charge your Copper for your ſecond Liquor, which turn over at 178 Degrees. Let it ſtand one Hour and a Half. Set Tap, &c. Get your two raw Worts into your Copper Back, or as much as is convenient of it. I will ſuppoſe your third Liquor ready. By knowing the Quantity of Wort you already have, you will know how much to turn over; but be ſure to have enough, as you can always boil it away till you obtain your Quantity. Let your third Liquor be turned down at 158 Degrees; remain on the Goods three Quarters of an Hour. Set Tap. Weigh your Hops, which muſt be the beſt Kent: boil your firſt Wort one Hour and a Quarter; then turn out. Get the Remainder of your ſecond and the Whole of your third Worts into the Copper; boil them together with

with the unuſed Ingredients two Hours, hard. Pitch your Tun at 64 Degrees, uſing about a Gallon of Yeaſt. When you ſee the Head much up, ſkim it, and beat the Remainder well in: when it riſes again, juſt before it falls, ſkim it as before, rouſing the Tun well.

Uſe, at Cleanſing, Half a Pound of Bay Salt, and rather more than Half a Peck of malted Bean Flour; rouſing your Tun well.

Keep your Caſks well filled, and top latterly with fine Beer. Put ſome ſcalded Hops into every Caſk, on which the Beer will feed.

AMBER BEER, or TWOPENNY.

THIS Beer is both pleaſant and wholeſome, and is in almoſt as great Requeſt as Porter, during the Winter, when it is drunk warm. It is, unqueſtionably, the moſt profitable of any Malt Liquor, as it is ſent out to the Cuſtomers within a Week from the Time of brewing, and uſually conſumed within the following one. I ſhall give you ſome Examples for your future Practice.

EXAMPLE I.

Commenced brewing at five o'Clock in the Morning; Thermometer 32 Degrees.

Kinds

Kinds of Malt :

2½ Weſt Country Pale
12½ Herts Pale
10 Herts Amber

25 Quarters.

	Cwt.	Qrs.	lbs.
Malt, 25 Quarters			
Hops	1	0	0
Leghorn Juice	0	0	20
Moloſſes	0	0	30
Grains of Paradiſe, ground	0	0	4
Capſicum	0	0	4

Charged the Copper fifty Barrels and three Gallons. The firſt Liquor was all turned over at 169 Degrees. Maſh one Hour : ſet Tap at ſeven o'Clock. Tap, 146 Degrees ; Gravity, twenty-ſix Pounds $\frac{6}{10}$ per Barrel.

Second

Second Copper charged thirty-two Barrels and ſeven Gallons. Turned all the Liquor down at 170 Degrees. Maſh Half an Hour: ſet Tap at eleven o'Clock. Tap, 152 Degrees; Gravity, eleven Pounds ½ per Barrel.

Firſt Wort in the Copper fifty-one Barrels and two Gallons: boiled three Quarters of an Hour, and came out forty-ſeven Barrels, two Firkins, and five Gallons.

Charged the Copper for the third Liquor fifty-nine Barrels and one Gallon: turned all down upon the Goods at 160 Degrees: maſhed twenty minutes. Tap, 146 Degrees; Gravity, ſix Pounds per Barrel.

Second Wort came into the Copper forty-ſeven Barrels, two Firkins, and five Gallons: boiled

boiled hard one Hour, and came out forty-two Barrels and one Gallon.

Pitched the Tun at 64 Degrees; came into the Square eighty-one Barrels, one Firkin, and ſeven Gallons. Cleanſed on the Evening of the third Day, uſing at the Time four Pounds of ground Ginger, Half a Pound of Bay Salt, and a Quartern of Flour. Cleanſe with the Sweets on.

EXAMPLE II.

November 15th, commenced brewing at five o'Clock in the Morning; Thermometer 50 Degrees in the Air.

Kinds of Malt:

15 Herts Pale
10 Herts Amber

25 Quarters.

Malt,

	Cwt.	Qrs.	lbs.
Malt, 25 Quarters			
Hops	0	3	20
Spaniſh Juice	0	0	20
Moloſſes	0	0	30
Grains of Paradiſe	0	0	4
Fabia Amara	0	0	4
Capſicum	0	0	4

Charged the firſt Copper forty-nine Barrels: Liquor all turned down at 167 Degrees; ſhould have been 170 Degrees, but was obliged to turn down eleven Barrels of Liquor nearly boiling, owing to the Flue drawing unuſually, and turned in as much cold Liquor. Maſhed one Hour and a Quarter. Tap, 144 Degrees; Gravity, twenty-ſix Pounds per Barrel.

Second Copper charged thirty-eight Barrels and a Half: Liquor all turned down at 172

172 Degrees. Tap, 150 Degrees; Gravity, ten Pounds $\frac{1}{2}$ per Barrel.

Firſt Wort in the Copper thirty-five Inches; boiled three Quarters of an Hour, and came out thirty-eight Inches, or forty-nine Barrels, three Firkins, and ſix Gallons.

Third or little Copper charged full, or fifty-nine Barrels and one Gallon: Liquor 160 Degrees, all over. Tap, 140 Degrees; Gravity ſix Pound $\frac{1}{2}$ per Barrel.

Second Wort boiled two Hours: pitched the Tun at 64 Degrees. Cleanſed on the 18th, eighty-two Barrels and three Firkins: uſed at cleanſing four Pounds of ground Ginger, Half a Pound of Bay Salt, and Half a Quartern of Flour.

EXAMPLE

EXAMPLE III.

Commenced brewing on the 27th, at five o'Clock in the Morning; Thermometer 58 Degrees.

Kinds of Malt:

8 Weſt Pale, indifferent
6 Weſt Brown, do.

14 Quarters.

	Cwt.	Qrs.	lbs.
Malt, 14 Quarters			
Hops	0	2	6
Spaniſh Liquorice	0	0	12
Moloſſes	0	0	20
Grains of Paradiſe	0	0	3
Fabia Amara	0	0	2
Capſicum	0	0	4

First

Firſt Copper charged forty Barrels. Liquor all turned over a 172 Degrees. Maſhed one Hour. Tap, 136 Degrees; Gravity, twenty-three Pounds per Barrel.

Second ſmall Copper charged full. Liquor all turned over at 178 Degrees. Maſh Half an Hour. Tap, 154 Degrees; Gravity, nine Pounds per Barrel.

Firſt Wort boiled three Quarters of an Hour.

Copper charged for third Liquor: all turned over at 165 Degrees. Maſh three Quarters of an Hour. Tap, 143 Degrees; Gravity, five Pounds $\frac{3}{4}$ per Barrel.

Second Wort boiled two Hours and a Quarter.

Pitched

Pitched Tun at 64 Degrees. Cleanſed the 30th, uſing two Pounds of Ginger, and a Quarter of a Pound of Bay Salt and Flour. Forty Barrels and three Firkins.

LONDON ALE.

ALE, of all Malt Liquors, is the moſt delicate in its Nature, and will bear leſs tampering with than any other; it will, therefore, require your niceſt Care throughout every Part of the Proceſs.

As Brightneſs or Tranſparency is a great Recommendation to Ale, and as it is ſometimes kept for a Series of Years, I ſhall recommend hard Water, as the peculiar Qualities it poſſeſſes aſſiſt in preventing Acidity, as well as in the Preſervation of the Beer.

I ſhall give you ſome Examples, and endeavour to aſſiſt you with ſome Obſervations on this Subject.

Commenced brewing at five o'Clock in the Morning: Thermometer 60 Degrees.

Kinds of Malt:

23 Quarters Herts White, good
2 ditto Herts Amber, ditto

25 Quarters.

	Cwt.	Qrs.	lbs.
Malt, 25 Quarters			
Hops	1	3	10
Grains of Paradiſe	0	0	4
Coriander	0	0	4
Orange Powder	0	0	4

Firſt

Firſt great Copper thirty-eight inches, or forty-nine Barrels, three Firkins, and ſix Gallons. Liquor in the Copper 168 Degrees, but gained 5 Degrees, and was all turned over on the Goods at 173 Degrees. Maſhed one Hour: ſtood upon the Goods as long. When the Tap was ſet, it was near 150 Degrees; when nearly ſpent, 140 Degrees. My Jar Caſe being full of cold Liquor, I took a Sample of the Wort from the Underback, and filled my Aſſay Jar, which I placed in the Jar Caſe till it had cooled to 80 Degrees, when the Gravity was thirty-two Pounds $\frac{29}{100}$ per Barrel.

Second Copper was charged forty-eight Inches, or thirty-eight Barrels, two Firkins, and ſix Gallons. Liquor in the Copper 167 Degrees: all turned over at 172 Degrees. Tap, when ſet, was 153 Degrees, and the then Gravity was twenty-two Pounds. I

filled a Jar with the Wort, and placed it in the Caſe till it had attained 70 Degrees of Heat; when the Gravity was twenty-two Pounds $\frac{73}{100}$ per Barrel.

Firſt Wort, when in, thirty-ſix Inches; boiled one Hour: when out, forty Inches.

Third Liquor charged in the ſmall Copper, full, or fifty-nine Barrels and one Gallon. All turned over at 149 Degrees. Maſhed a Quarter of an Hour. Set Tap at two o'Clock: Tap, 139 Degrees.

Second Wort, when in, thirty Inches; when out, thirty-ſix Inches; having boiled two Hours.

Pitched the Tun at 62 Degrees. Cleanſed on the fourth Day, at 74 Degrees: uſing four

four Pounds of Ginger, Half a Pound of Salt, and Half a Peck of Flour.

Obſerve:----In Amber you have, before, been directed to cleanſe with the Sweets on; but in Ale you muſt work it low, in order to get the Sweets off. When you find it riſes (as it will) three or four Feet high, juſt before it begins to fall, ſkim the Head off, beating the Reſt well in, and rouſing the Tun. If the Blebs are large, and bliſtered, your Liquors have been taken too high. If this is the Caſe, and you find it much upon the Fret, take Half a Pound of Salt of Tartar, a Quartern of malted Bean Flour, and ſome freſh elaſtic Yeaſt, and put them into the Tun; rouſing it thoroughly. This will cauſe it to work kindly; but I recommend, that you will not let it remain more than three or four Hours after, before you cleanſe. Let it be conſtantly topped up till the Yeaſt

is all thrown out of the Caſks; then top it up with fine Ale. Before you bung it up, put in a large Handful of ſcalded Hops, cold: after which, bung up, and ſtow it for Uſe.

If you have Occaſion to ſend it out before ſo fine as you would wiſh it, you may put in about a Pint of Finings, made from the beſt Iſinglaſs.

N. B. The Examples I here give you are from different Parcels of Malt.

EXAMPLE II.

Wedneſday, commenced brewing at five o'Clock in the Morning. Thermometer 52 Degrees.

Kinds

Kinds of Malt:

23 Quarters Herts White, not very good

2 Ditto Herts Amber, good

25 Quarters.

	Cwt.	Qrs.	lbs.
Malt, 25 Quarters			
Hops	1	3	12
Grains of Paradiſe	0	0	4
Coriander Seed	0	0	4
Orange Powder	0	0	4

Firſt Copper charged forty-nine Barrels, three Firkins, and ſix Gallons. Liquor all down at 172 Degrees. Maſhed one Hour: ſtood upon the Goods the ſame time. Tap, 151 Degrees. Gravity, twenty-nine Pounds $\frac{77}{100}$ per Barrel.

Second Copper charged fifty-two Barrels and ſeven Gallons. Liquor all down at 171 Degrees. Maſh Half an Hour. Tap, 156 Degrees. Gravity, ſeventeen Pounds $\frac{1}{10}$ per Barrel.

Firſt Wort boiled about one Hour; the Gravity of which was twenty-ſeven Pounds $\frac{5}{10}$ per Barrel.

Third Copper charged fifty-nine Barrrels. Liquor all turned down at 150 Degrees. Maſhed three Quarters of an Hour. Tap, 138 Degrees. Gravity, twelve Pounds $\frac{3}{10}$ per Barrel.

Second Wort boiled two Hours and a Quarter; the Gravity of which was ſixteen Pounds $\frac{2}{10}$ per Barrel.

Turned

Turned out thin into the Backs, and pitched the Tun at 62 Degrees. It remained till the third Day, when it was cleanſed at 73 Degrees: uſing at the ſame Time four Pounds of ground Ginger, Half a Pound of Bay Salt, and Half a Peck of Flour.

WINDSOR ALE.

THIS Ale has experienced ſo great a Demand in London and its Vicinity, for a few Years paſt, as materially to affect the London Pale Beer Brewery. It is a Liquor better calculated for Winter than for the Heat of Summer. The London Brewers, however, were induced to brew upon the ſame Principle, and in many Inſtances they excel the Original. I ſhall preſent you with the moſt approved and generally received Mode of brewing it.

Kind of Malt;

25 Quarters of the beſt Herts Pale.

Malt,

	Cwt.	Qrs.	lbs.
Malt, 25 Quarters			
Hops	2	0	0
Honey	0	0	40
Coriander Seed	0	0	4
Grains of Paradiſe	0	0	2
Orange Pea	0	0	3
Ground Liquorice Root	0	0	12

Let your Hops be of the beſt Kind, and put them into cold Liquor, the Night before, to ſoak.

Charge your firſt Copper full; and, as your Heats muſt be high, keep your Rakes moving during the turning down of your firſt Liquor, which muſt be done at 178 Degrees. Maſh one Hour and a Quarter. Let it ſtand upon the Goods one Hour and a Half. Set Tap: obſerve the Heat and Gravity. Your ſecond Copper (which muſt have been charged as ſoon as you turned your firſt Liquor over) being now ready, turn

turn on at 186 Degrees. Maſh one Hour: let it ſtand upon the Goods one Hour; then ſet Tap, making the uſual Obſervations. Get your firſt Wort, and as much of the ſecond as you can, into your Copper Back, when the Tap is quite ſpent. Turn on your third Liquor at 160 Degrees. Maſh three Quarters of an Hour; allowing the Liquor to ſtand on the Goods one Hour.

Let your firſt Wort into the Copper, and put in the Hops: boil nearly an Hour, uſing the Ingredients enumerated, but do not put in the Honey till juſt before you turn out: when this is done, keep the Copper rouſing from the Bottom till all the Wort is out.

Set Tap for your third raw Wort, getting it up to that Part of the ſecond raw Wort which was not uſed in the firſt boiled.

[A fourth

[A fourth Liquor ſhould now be ready in your ſmall Copper, to waſh your Goods for Small Beer or Vi: but, as I ſhall give one general Example at the End of this Treatiſe, I will proceed with the Strong Beer.]

Your ſecond Wort being now in the Copper, boil it with the Quantity of Hops before mentioned about two Hours and a Quarter; and then turn out. Endeavour to get about two Barrels and three Quarters per Quarter of malt: but in this you muſt be governed by the Price of Malt and Hops.

Pitch the Tun at 62, and cleanſe as near 80 Degrees as you can, on the third Day after; uſing Salt, and Bean Flour.

WELCH ALE.

This is the moſt luſcious and richly flavoured Ale I ever drank. I ſaw the whole Proceſs at Caernarvon, in North Wales. When the Liquor was lading on, having with me a Pocket Thermometer which I uſe in the Aſſay Jars, I put it into the Copper, and found the Heat to be nearly what I ſhould have turned over at.

I ſhall give you, as nearly as I can, the Welch brewers Manner of Proceeding, from

I ſhall

twelve Boles, or ſeventy-two Buſhels, of Malt. Their Malt was all Pale, but higher coloured than the Ware, and equal to the beſt I ever ſaw.

Kind of Malt:

9 Quarters of beſt Pale Malt.

—

Malt, 72 Buſhels, or 9 Quarters

	Cwt.	Qrs.	lbs.
Hops, beſt Kent	0	2	14
Sugar	0	0	20
Grains of Paradiſe	0	0	2
Liquorice Root ground	0	0	2

in the Tun.

Two Liquors and one Wort for Strong, and one Liquor and one Wort for Table Beer.

Take

Take your firſt Liquor at 178 Degrees. Maſh an Hour and a Half. Let it ſtand on the Malt two Hours; then ſet Tap. Turn your ſecond Liquor down at 190 Degrees: maſh an Hour and a Half: let it ſtand two Hours on the Goods. Set Tap: when ſpent, turn off below, and turn on for Table Beer. Let the Liquor be at 150 Degrees. Maſh three Quarters of an Hour: let the Liquor ſtand on the Goods two Hours. Set Tap, and let it remain in the Underback till your Strong Wort is out. As ſoon as you have turned on for Table Beer, get your Strong Wort into the Copper, which boil an Hour and a Half with your Hops (before ſpecified). Do not put the Sugar in till juſt before turning out.

Pitch your Tun at 62 Degrees; and uſe at cleanſing Salt and Flour. Get your Fermentation as near 80 Degrees as you can.

Keep

Keep your Caſks well filled ; and, when nearly done working, uſe fine Ale to top up with.

Before you bung up, put a large Handful of ſcalded Hops into every Caſk ; then ſtow it cool, for uſe.

WIRTEMBERG ALE.

KINDS of Malt :

16 Quarters Pale Herts
4 do. Amber do.

20 Quarters.

	Cwt.	Qrs.	lbs.
Malt, 20 Quarters.			
Hops	1	2	20
Honey	0	0	28
Sugar	0	0	20
Hartſhorn Shavings	0	0	4
Ground Coriander Seeds	0	0	4
Caraway Seeds	0	0	1

Take

Take your firſt Liquor at 172 Degrees; maſh one Hour and a Half; ſtand upon the Goods two Hours; ſet Tap; weigh your Wort; and let your ſecond Liquor be getting in Readineſs.

When your firſt Tap is all ſpent, turn over your ſecond Liquor at 180 Degrees: maſh one Hour, and let it ſtand upon the Goods two Hours. Set Tap, and weigh your Wort as before. When ſpent, get the whole into your Copper Back.

Turn your third Liquor over the Goods for Table Beer at 150 Degrees; maſh three Quarters of an Hour; let it ſtand on the Goods one Hour and a Half; and then ſet Tap.

Let your Strong Wort into the Copper; boil it an Hour and a Half with the Hops and all the Ingredients, excepting the Honey

and Sugar, which put in only about ten Minutes before you turn out the Liquor; rouſing the Copper all the Time till quite diſſolved.

Pitch your Tun at 62 Degrees: cleanſe on the third Day after, as near 80 Degrees as you can; uſing Half a Peck of Bean Flour malted, and Half a Pound of Bay Salt. Rouſe the Tun well.

Put a large Handful of ſcalded Hops into every Caſk: ſtow it cool.----Procure about two Barrels and a Half per Quarter.

Having finiſhed with the Strong Beer, we will return to the Table Beer, which we left ſpending, and which by this Time ſhould all be in the Under Back. Get it into the Copper, with the ſame Hops that are

are in the Jack Back, and put in fourteen Pounds of Spaniſh Juice, but not till the Copper is boiling hard, that the Ebullition may prevent its ſticking to the Copper. Let it boil about an Hour and a Half, or till you have about twenty-five Barrels.

Pitch the Tun at 66 Degrees. Cleanſe the next Day, uſing ſome Salt and Flour.--- Put in a little Finings before you ſend it out.

HOCK.

THIS is a Beer, that has, within a few Years, had a great Run; I ſhall, therefore, give you the neceſſary Inſtructions for brewing it.

Kinds of Malt:

14 Quarters of Herts Pale
6 Ditto Herts Amber

20 Quarters.

	Cwt.	Qrs.	lbs.
Malt, 20 Quarters.			
Hops	1	3	10
Cocculus Indicus Berry	0	0	4
Sugar	0	0	20
Fabia Amara	0	0	2
Capſicum	0	0	3

Take

Take your firſt Liquor at 176 Degrees: maſh one Hour and a Quarter; remain on the Goods the ſame Time; and ſet Tap: when ſpent, turn off below, and turn your ſecond Liquor all down at 182 Degrees. Maſh one Hour; continue on the Goods two Hours: ſet Tap, and, when ſpent, turn the third Liquor over the Goods, for Table Beer, at 160 Degrees [If a Common Brewer, you muſt cap on with freſh Malt, as before obſerved, if not unneceſſary]. Maſh one Hour, and remain on the Goods two Hours. Set Tap: get your Strong Wort into the Copper, with the Hops and the other Ingredients, excepting the Sugar, which put in agreeably with the former Direction: boil it two Hours and a Quarter; then turn out.

Pitch your Tun at 64 Degrees, and cleanſe the ſecond Day. Keep the Caſks

well filled up ; putting a large Handful of Hops into every Caſk before you bung up.

Having left the Table Beer coming into the Under Back, we ſhould thus proceed :--- When the Tap is ſpent, get it into the Copper with the ſame Hops which were juſt before uſed, and boil it one Hour and a Half, uſing fourteen Pounds of Spaniſh Juice whilſt it is boiling ſharply. Endeavour to procure about twenty-five Barrels.

Pitch the Tun at 66 Degrees. Uſe ſome Flour and Salt at cleanſing, which ſhould be done the next Day. Put in a little Finings before you ſend any out.

It ought to be remembered, that after Strong Beer you are always ſuppoſed to cap on for Table. This is for the Common Brewer only ; the Exciſe not having any Thing to do with the private Gentleman.

SCURVY-

SCURVY-GRASS ALE.

THIS Ale is not in ſuch general Uſe in London, as, from its wholeſome Properties, might be expected. Brewers are generally ſaid to be their own Phyſicians; for nothing is believed to be a greater Purifier of the Blood, or Antiſcorbutic, than Sweet-wort. The Proceſs of brewing this Ale preſerves this properly, with the Addition of the Virtues of the Scurvy-graſs. I ſhall now proceed to give Directions for brewing this Liquor.

Kinds of Malt:

3 Quarters Herts Pale
2 Ditto Amber

5 Quarters.

Malt,

Malt, 5 Quarters
Hops, 25 Pounds
Moloſſes, 10 Pounds
Garden Scurvy-graſs, 5 Buſhels
Alexandrian Senna, 2 Pounds; Horſe Radiſh Root, 1 Pound; and put ſliced into the working Tun in a Net.

After having your Malt well ground, turn your firſt Liquor over at 170 Degrees: maſh one Hour; remain on the Goods as long. Turn over, the firſt Time, about ten Barrels. When you have ſet Tap, and it is ſpent, turn over your ſecond Liquor at 172 Degrees: maſh three Quarters of an Hour. Turn over for the ſecond about ſeven Barrels. Set Tap: get your firſt and part of the ſecond raw Wort into your Copper Back: when the Tap is ſpent, turn your third Liquor over at 160 Degrees; the Quantity turned over ſhould be about twelve Barrels.

Barrels. Maſh twenty Minutes; remain on the Goods half an Hour: ſet Tap, and when ſpent get your Wort into the Copper (where I will ſuppoſe the Reſt of your Wort has been), with the Fire damped cloſely up; having put in your Hops, good brown, and freſh got Scurvy-graſs, in the Quantities mentioned before. Boil the Whole one Hour and a Quarter; moderately during the firſt Hour, but ſharply at the latter End.--- A little before turning out, put in ten Pounds of Moloſſes, keeping the Rake going in the Copper till the whole Wort is in the Jack Back.

Pitch your Tun at 66 Degrees. Cleanſe on the third Day with the Sweets on. This Liquor is drunk both warm and cold.

N. B. The Scurvy-graſs may be had all the Year round at Covent Garden.

TABLE

TABLE BEER.

TABLE Beer is a Beverage made Uſe of in almoſt every Family; than which nothing can be more wholeſome, or the want of be more miſſed. I ſhall therefore, without any farther Preliminary, proceed to give you the Mode of manufacturing it.

Commenced brewing at ſix o'Clock in the Morning. Thermometer 63 Degrees in the Air.

Kinds of Malt:

4 Quarters Herts White
2 Ditto do. Pale
2 Ditto do. Amber

8 Quarters.

Malt,

Malt, 8 Quarters
Hops, 72 Pounds
Spaniſh Juice, 12 lbs.: you might uſe of ground Liquorice Powder 12lbs.

Charged the firſt Copper thirty Inches; turned all down at 168 Degrees; maſhed three Quarters of an Hour; ſet Tap at nine o'Clock; Tap 146 Degrees. Second Copper charged thirty Inches, or fifteen Barrels and a Half. Liquor all turned over at 172 Degrees; maſhed Half an Hour; ſet Tap at eleven o'Clock: Tap 150 Degrees when nearly ſpent.

Charged Copper the third Time twenty-eight Inches, or about twenty Barrels: turned all over at 158 Degrees; ſet Tap at one o'Clock; maſhed Half an Hour: Tap 148 Degrees.

Firſt

Firſt Wort came into the Copper twenty-eight Barrels, one Firkin, and ſeven Gallons. Boiled one Hour, and came out twenty-ſix Barrels, one Firkin, and three Gallons.

Second Wort when in was three Inches: boiled one Hour, and turned out ſixteen Barrels.

Pitched the Tun at 70 Degrees: cleanſed the next Day; uſing at the Time one Pound of ground Ginger, four Pounds of Flour, and one Pound of Salt.

Let your Tun be thoroughly rouſed, and keep your Caſks well filled.

Put the Spaniſh Juice into the firſt Wort about a Quarter of an Hour before turning out.

You

You may put Half a Pint of Finings into every Caſk when ſending out, if wanted for immediate Uſe ; or, otherwiſe, it will become fine itſelf.

EXAMPLE II.

Thermometer 66 Degrees.

Kinds of Malt :

5 Quarters of Herts Pale
3 Ditto do. Amber

8 Quarters.

Malt, 8 Quarters
Hops, 70 Pounds
Spaniſh Juice, 12 Pounds : might have uſed of Ground Liquorice Powder 12 Pounds.

Charged

Charged the firſt Copper ten Inches; turned all the Liquor over at 167 Degrees; maſhed one Hour; remained on the Goods as long; ſet Tap at 145 Degrees. The Wort, when at 86 Degrees, was of the Gravity of eight Pounds $\frac{3}{10}$ per Barrel.

Second Copper charged thirty-two Inches; all turned over at 170 Degrees; maſhed Half an Hour; remained on the Goods one Hour; ſet Tap at 140 Degrees. The Gravity when at 50 Degrees was ſix Pounds per Barrel.

The third Copper charged, and the Liquor all turned over at 154 Degrees; maſhed Half an Hour; remained on the Goods one Hour. Tap, 138 Degrees: Gravity, five Pounds $\frac{5}{100}$ per Barrel.

Boiled the firſt Wort three Quarters of an Hour,

Hour, with the Hops. Went in at three, and came out at ſeven, Inches. The Gravity when taken out of the Copper, in its higheſt State of Ebullition, with the Infuſion of Hops, was twelve Pounds $\frac{45}{100}$ per Barrel.

Got the ſecond Wort into the Copper: boiled two Hours. When out, ſix Inches. Gravity, ten Pounds $\frac{3}{10}$ per Barrel.

Pitched the Tun at 68 Degrees: cleanſed the next Day; uſing one Pound of Salt, four Pounds of Flour, and one Pound of ground Ginger.

If you uſe one Pound of Grains of Paradiſe, ground, it will give a Warmth to the Liquor.---Attend to the Hints before given.

BEER FOR SHIPPING, FININGS, OR WORKHOUSES,

AFTER ANY KIND OF STRONG BEER.

I SHALL give you an Example, after Porter.

25 Quarters of Goods.

Turn over fifteen Barrels at 160 Degrees; let it ſtand about two Hours, and then ſet Tap. As this Liquor will only diſlodge the Wort that remained in the Grains and Hops, your only Loſs in Quantity will be in the Copper. Boil it three Quarters of an Hour with the ſame Hops, and your Produce will be about thirteen Barrels and a Half.

Pitch

Pitch your Tun at 70 Degrees, and cleanſe the next Day.

This is ſold to the Shipping at Ten Shillings per Barrel.

SHIPPING BEER,

WHEN YOU ARE OBLIGED TO USE FRESH MALT.

THIS Article is alſo ſold, in the Seaſon, to Haymakers, &c.

Kinds of Malt:

1½ Quarter Pale Malt
1½ Ditto Brown do.

3 Quarters.

Malt, 3 Quarters
Hops, 14 Pounds, good brown.

Having your Malt well ground, turn over your firſt Liquor at 172 Degrees, about fifteen

fifteen Barrels: maſh one Hour; ſtand one Hour and a Half on the Goods. Set Tap, and, when ſpent, turn over about fifteen Barrels more at 180 Degrees. Maſh one Hour and a Half; ſtand two Hours on the Goods: then ſet Tap. Get both Worts into your Copper, and boil them nearly two Hours; but endeavour to get about eight Barrels per Quarter, or twenty-four Barrels in the Gyle.

Pitch your Tun at 70 Degrees, uſing about Half a Gallon of Yeaſt. Cleanſe the next Day.

If intended for Shipping, the more new you ſend it out, the greater Satisfaction it will give: if diſpoſed of elſewhere, it muſt be worked off clean.

TO MAKE UP A VAT OF 150 BARRELS OF COMMON VI, OR RETURNS OF TABLE,

Mixed to double its Value.

USE Half a Barrel of Colouring, ¼ Cwt. of Cream of Tartar, ¼ Cwt. of ground Alum, 1 lb. of Salt of Steel, and two Barrels of ſtrong Finings. Mix theſe well together, and put them in the Vat, rouſing it thoroughly at the ſame Time. Let the Vat remain open three Days; then cloſe it, and ſand it over. In a Fortnight it will be fit for Uſe. Your own good Senſe will inform you how, to Advantage.

TO

TO BRING SEVERAL SORTS OF BEERS,
Mixed together in one Vat,
TO ONE TASTE AND PALATE.

FOR every one hundred Barrels in your Vat take ſix Pounds of Porter Extract; ſix Pounds of Orange Pea, ground; one Pound of Alum, ground; one Pound of Heading; and ſix Pounds of Indian Bark. Mix them well with one Butt of Finings, and rouſe it thoroughly at the Time. Let it continue open three Days; then cover it, and ſand it over. It will be fit for Uſe in a Fortnight.

ON FERMENTATION.

WE have now before us a Subject of the firſt Magnitude, and the moſt delicate to be treated on, it being in perfect Embryo; and in the Working Tun the deciſive Stroke is exhibited which is to govern the entire Proceſs of the Gyle.

It is by the Knowledge when to urge, and when to retard, the Fermentation; that you are enabled to gratify the Palates and the Eyes of your Cuſtomers; and inſtead of purſuing it to the acetous, to ſtop it when it has attained the vinous, State.

It is not merely Potency that is neceſſary for the Satisfaction of Malt Liquor, for Flavour and Tranſparency are generally ſtill more required.

The firſt Stage of Fermentation commences at 40 Degrees, and the laſt at about 80 Degrees. It is by a perfect vinous Fermentation that the inebriating Quality (or Strength) of Beers is obtained. Be particular in recollecting, that---the Moment the vinous Fermentation is completed, the acetous commences; therefore your Knowledge and Prudence will direct you to cleanſe immediately.

Your Beer will riſe three or four Times, and three or four Feet high. If it is Porter, merely ſkim off any dirty Head that may be upon the Yeaſt, and rouſe the Tun well.—

Cleanſe

Cleanſe at 76 Degrees, with the Taſte of the Hop.

Ale ſhould be worked cool; and, if in Summer, I would recommend no more Yeaſt than juſt enough to ſave it. If the Blebs are about the Size of a ſmall Nutmeg, with a light Head, the Liquors have been properly taken; but if as large as a Walnut, your Liquors have been taken too high: if vapid, and without any or very ſmall Blebs, your Liquors have been taken too low.—By theſe Hints you will be able to correct any Error in your next Brewing; and I here give you ſome Hints to correct them in the preſent Caſe: but Prevention is always better than a Cure.

I ſhall ſuppoſe your Liquor to have been taken too high, and much bliſtered in the Tun; in which I will alſo ſuppoſe there are

ſixty

ſixty Barrels.----Take one Peck of malted Bean Flour, one Pound of Salt of Tartar, and one Gallon of freſh and lively Yeaſt; mix them well together, and, after ſkimming off as much of the Head as is convenient, put the above in, rouſing it well from the Bottom. Cleanſe in three or four Hours after.

If your Liquor has been taken too low, and the Beer is vapid, and will not work, you muſt urge it, by putting in ſome Bean Flour and Bay Salt; and, if neceſſary, fill a Caſk of hot Liquor, and lower it into the Tun.

In Ale, you will obſerve the Blebs to be very dim juſt before it is fit to cleanſe.

HEADING.

HEADING.

UNDER this Head it may be neceſſary to obſerve, that there are various Modes of making it. Some make Uſe of ground Copperas and ground Alum, in about equal Proportions; ſome reſort to Salt of Steel, of which, as much as will lie on a Shilling is ſufficient for a Barrel of Beer. But, as the Duties of a Brewhouſe ſufficiently employ every Perſon engaged in it, I recommend it to be purchaſed of thoſe who make it their Buſineſs to have it ready prepared.

Obſerve, that Porter ſhould not be ſent out without it, as it cauſes that Head ſo much admired in that Liquor, and is agreeable to its Flavour.

FININGS.

FININGS.

ON this Subject it is neceſſary to obſerve ----that you muſt have ſeveral Veſſels, with Iſinglaſs in its different Stages. Take the Book Iſinglaſs, of from about 1s 2d or 1s 6d per Pound, picked clean. Fill a Caſk half full of good ſtale bright Beer, and the other half with the above Iſinglaſs, when it will ſoon open, and become as thick as your Hand. Examine it well, and throw away all the hard and indiſſolvable Pieces which you may find among it. You muſt have two Sieves and a Hand-bruſh: place the coarſeſt Sieve upon an empty Caſk, and half fill it with the partly diſſolved Iſinglaſs; then rub it round in the Sieve till you have made

made all paſs through it that you can; and that which will not paſs, put again into the Caſk from whence you took it, and let it remain till more diſſolved: keep doing this till your Caſk is nearly full; then, after putting ſome ſharper Beer upon it (and, if much wanted, you may quicken it by putting a Spoonful of Vitriolic Acid; but this I do not recommend, if it can be avoided), when ſufficiently diſſolved, place the fineſt Sieve upon an empty Caſk, and proceed as before, when it will be fit to put into the Beer.

For Ale, you ſhould make Uſe of the beſt Staple Iſinglaſs you can procure; and always take Care to have a Sufficiency ready for Uſe. When you put it into the Caſk, make Uſe of a Stick to ſtir it up well: it will fall in a few Hours.

SACCHA-

SACCHARINES, BITTERS, &c.

MALT.

THE Pale Sort has moſt of the natural Grain in it, and is therefore the more nouriſhing; but, for the ſame Reaſon, it requires a ſtronger Conſtitution to digeſt it.

Brown Malt makes a Drink much leſs viſcid, and fitter to paſs the ſeveral Strainers of the Body.

Pale Malt, as I have before ſtated, ſhould always be brewed with hard Waters; becauſe the mineral Particles wherewith theſe Waters are

are impregnated help to prevent the Cohe-ſions of thoſe which are drawn from the Grain, and the better enable them to paſs the proper Secretions; and the viſcid Particles of the Grain likewiſe prevent thoſe of the Waters from doing the Miſchief which otherwiſe they might occaſion: but ſoft Waters are beſt calculated to draw out the Subſtance of high-dried Malts, which retain many fiery Particles in their Contextures, and are therefore better loſt in a ſmooth Vehicle.

Hops are well known to be a ſubtle, grateful Bitter in their Compoſition; therefore, with this Liquor, they add ſomewhat of an alkaline Nature, i. e., Particles that are ſublime, active, and rigid; by which Means the ropy and viſcid Parts of the Malt are more divided and ſubtilized; and are, therefore, not only rendered more eaſy of

Digeſtion

Digeſtion and Secretion in the Body, but alſo, while in the Liquor, they prevent its running into ſuch Coheſions as would make it ropy, vapid, and ſour.

SUGAR.

Sugar, Saccharum---a very ſweet, agreeable ſaline Juice, expreſſed from the Sugar Cane, which grows plentifully in the Weſt Indies. Uſed in the Copper.

HONEY.

Honey is a ſweet vegetable Juice, collected by the Bees from the Flowers of different Plants: it contains a Quantity of fixed Air,

and is antiſeptic, as well as detergent and diuretic. Chemiſts draw a Water, a Spirit, an Oil, &c. from Honey. When uſed in the Brewery, it is for Ale, and ſhould be in the Copper; though ſome prefer the Jack Back, and others the Tun.

MOLOSSES.

Molosses is that groſs yet fluid Matter remaining of Sugar after refining, and which no boiling will bring to a Conſiſtence more ſolid than that of Syrup. Properly, Moloſſes are only the Sediments of one Kind of Sugar, called Chypre, or brown Sugar, which is the Refuſe of other Sugars not to be whitened or reduced into Loaves. It is generally uſed for Amber; ſometimes in the Tun, and ſometimes in the the Copper.

STICK

STICK LIQUORICE.

Stick Liquorice. New Green Liquorice ſhould be choſen ſmooth and even, about the Thickneſs of the middle Finger: ruddy without, yellowiſh within, eaſy to cut, and of an agreeable Smell. This Root, when carefully dried and powdered, is of a richer and more agreeable Taſte than when freſh. This is uſed ground, and in the Tun: it is very balſamic and detergent.

SPANISH LIQUORICE.

Spanish Liquorice, or Juice, is made from boiling the foregoing Root lightly in Water till the Fluid has acquired a deep yellow Tincture, and the Water, at Length, evaporated over a moderate Fire. There

remains a black ſolid Sediment, of a pleaſant Smell; of a dark reddiſh brown Colour when in the Maſs, and, when drawn out into Strings, of a golden Colour, which we call Liquorice Juice, or ſometimes Spaniſh Juice. Its Quantity amounts to nearly half the Weight of the Root. Long boiling impairs the Sweetneſs of the Juice, and gives it an unpleaſant Bitterneſs.

COLOURING.

I SHOULD recommend to every Brewer to provide himſelf with a ſufficient Quantity, as it gives a good Face to the Beer, and enables you to gratify the Sight of your different Cuſtomers.

I have

I have tried moſt Colourings, and find them very beneficial in Porter and Table Beer.

Unleſs you mix it up in your Finings, it ſhould be put in juſt before ſending out.

COCULUS INDICUS.

Coculus Indicus is uſed as a Subſtitute for Malt and Hops, and is a great Preſervative of Malt Liquor: it prevents ſecond Fermentation in bottled Beer, and, conſequently, the burſting of the Bottles in warm Climates. Its Effect is of an inebriating Nature.

BITTERS.

THE Qualities of bitter Bodies are fuppoſed to be dry, warm, aſtringent, and earthy. According to Grew, all Plants that are bitter and pungent, either on the Tongue or in the Throat, are deemed good Cleanſers, &c.

Bitter Things are generally reputed ſtomachic; yet according to Abercromby they are naturally the reverſe, and hurtful to the Stomach, and only become beneficial to it where their Aſtringency renders them proper.

Phil. Trans. No. 171, *P.* 1026.

HOPS.

HOPS.

Hops :---the principal Uſe of them is in the Brewery, for the Preſervation of Malt Liquors, which, by the Addition of this balſamic Aperient and diuretic Bitter, become leſs viſcid, leſs apt to turn ſour, more detergent, more diſpoſed to paſs off by Urine, and in general more ſalubrious. They are ſaid to contain an agreeable odorous Principle, which promotes the vinous Fermentation. When ſlightly boiled, or infuſed in warm Water, their Spirits are increaſed.

CALAMUS AROMATICUS.

Calamus Aromaticus is a ſpicy bitteriſh Root, brought from Lithuania and Tartary:

it is knotty; reddiſh without and white within; is uſed in cephalic and ſtomachic Compoſitions, and in the Brewery as a Succedaneum for Hops and Strength, by ſlicing it thin, and boiling it a ſhort Time with the Hops; one Pound of which is equal to ſix of Hops.

QUASSI LIGNUM.

Quassi Lignum---or Quaſſia Wood. This Wood is ſo called from a Negro who was named *Quaſſi:* he lived at Surinam, and uſed it medicinally. He had great Succeſs in giving it in Fevers of the malignant, intermitting, and putrid Kinds. It is the Quaſſia amara of Linnæus. The Wood has no Smell; is very bitter, and ſtronger and more concentrated than that of any one Medicament yet known; it is quite void of ſtyptical Effects,

Effects. When uſed in the Brewery, it is ground; but it leaves ſo ſevere a Bitter on the Palate, long after the Liquor is drunk, that it requires much Judgment in uſing it.

GENTIAN.

GENTIAN. This Root is one of the beſt ſtomachic Bitters in the Materia Medica; it promotes an Appetite, and greatly aſſiſts Digeſtion. It has alſo been extolled as a Febrifuge and Alexipharmic, and as a certain Remedy for the Bite of a Mad Dog:---on this Occaſion it is not only recommended internally, but externally, in the Form of a Cataplaſm; the Powder of the Root made up with Venice Treacle, and applied to the Wound.

Chambers.

CORIAN-

CORIANDER.

Coriander, while green, has a naufeous difagreeable Smell; but the Seed, when dry, fmells gratefully. It is reckoned very ftrengthening to the Stomach, and is a carminative. Matthiolus fays it is antifeptic. It is much ufed by Brewers, to give a Flavour to Ales.

CAPSICUM.

Capsicum, or Guinea Pepper, is ufed in Ales and Amber. It is of a warm Nature; difperfes Wind, and is a good prefervative in the Summer Seafon, &c.

CARA-

CARAWAY SEED.

Caraway (Carui) Seed is of a briſk aromatic Taſte. It is one of the greater hot Seeds, and is eſteemed ſtomachic and diuretic: it expels Wind, and ſtrengthens Digeſtion, &c. It is put into Ales, for the Flavour: it is uſed in the Tun.

GRAINS OF PARADISE.

Grains of Paradise are of a warm Nature alſo, and are uſed in Ales; but more frequently in Amber Beer. They diſperſe Wind, and communicate a Warmth to the Stomach. They are always ground, and uſed in the Tun.

GINGER.

GINGER.

GINGER. This warm aromatic Root appears to be much leſs liable to heat the Conſtitution than might be expected, from the penetrating Heat and Pungency of its Taſte, and the Fixedneſs of its active Principles.--- It gives Part of its Virtue to Water, tinging it with a pale yellow Colour.

As to its medicinal Uſe, it is hot and penetrating: it is held good to ſtrengthen the Stomach, and to promote Appetite. It alſo promotes Digeſtion; prevents Putrefaction, &c.

Chambers.

This Article when uſed in the Brewery is always ground fine, and made Uſe of in the Tun, at the Time of cleanſing; principally in Amber.

SALT.

SALT.

Salt. Mr. Beaume defines Salts to be Bodies compoſed of Earth, Water, and Phlogiſton, which are ſapid, and have a Diſpoſition to unite with Water, Earth, and inflammable Matter. Common Salt is a Genus of natural Salt ; of the Order of alkaline or rather neutral Salts.

It decrepitates in the Fire. Its Cryſtals are of the cubic Form, and compoſed of the muriatic Acid and foſſil Alkali. The Acid ariſes from this Salt in white Fumes, on mixing with it the concentrated vitriolic Acid.

Edwards.

SALT

SALT OF TARTAR.

Salt of Tartar is made of Tartar, waſhed, ground, purified, and calcined by a reverberatory Fire; or it is made by pulverizing what remains in the Retort after the Diſtillation of Tartar. This Salt is aperitive. It is uſed to draw out the Tincture of Vegetables. Potaſh diſſolved in Water, then filtered through Paper and evaporated to dryneſs, has the ſame effect.

BEANS MALTED.

Beans Malted. Mr. Boyle has ſeveral Experiments on Beans treated pneumatically, to ſhew the great Plenty of Air they afford, on which their Flatulency depends. They tend to mellow Malt Liquor; and, from their Properties, add much to its inebriating Qualities;

Qualities; but they muſt not be uſed in too large a Quantity.

OYSTER SHELLS.

Oyster Shells. Theſe are an Alkali of a more powerful Kind than is commonly ſuppoſed. The Proof of all alkalies is in their ſolution by and effervescence with acid Spirits; and Mr. Homberg found that they diſſolved much more eaſily, in the Acids of Nitre and Sea Salt, than Pearls, Coral, &c. which he ſuppoſes to be owing to their containing in the Body of the Shell a conſiderable Portion of the Sal-ſalſus, which is eaſily perceived upon the Tongue, and which keeps the whole Subſtance of the Shell in a Sort of half-diſſolved State.

Theſe

Theſe Shells are found to produce very great Effects on the Stomach when injured by acid Humours; and Mr. Homberg is of Opinion that their Eaſineſs of Solution is one great Reaſon of their good Effects, and that the Quantity of Sal-ſalſus which they contain contributes not a little towards it; ſince we are not to look upon that as mere Salt, but a Salt of a peculiar Kind, formed of Sea Salt by the Organs of the Animal, and the ſeveral Fermentations it undergoes in the Body of them. The hollow Shells are preferred; which, after being clean waſhed, and laid in the Sun to dry, are to be pounded in a Mortar, and then placed in the Sun again to dry.

They are very good to recover ſour Beer; but when uſed you muſt leave the Bung out.

ISIN-

ISINGLASS.

Isinglass,---the Engliſh Name of the Fiſh from which the Drug called Ichthyocolla, or Iſinglaſs, is made. It is a Species of the Accipenſer, or Sturgeon, and is diſtinguiſhed by not having any of the Tubercles which the Body of the common Sturgeon has.

The particular Manner of uſing it I have before given you.

ALUM.

Alum,---a Genus of earthy Salts, in the Order of earthy neutral Salts. It conſiſts of the vitriolic Acid and a clayey Earth : it

changes the purple Juices of Vegetables to a red Colour.

Quincy.

It is a Kind of mineral Salt, of an acid Taſte, leaving in the Mouth a Senſe of Sweetneſs, accompanied with a conſiderable Degree of Aſtringency.

Boyle.

When uſed in the Brewery, it is generally put in the Vats, as it gives Beer the Smack of Age.

SACCHA-

SACCHAROMETER.

THE Saccharometer as applied to Practice.---As the Qualities of Water differ, the firſt Thing required is to regulate your Inſtrument till it becomes the exact Repreſentative of the Water you are about to brew with.

The Doctrine of the Saccharometer is founded on the well known Theorem, that, when a ſolid Body is floating in any Fluid, the Part of the Fluid diſplaced by it is equal in Bulk to ſo much of the ſolid Body as is immerſed in it, and equal in Weight to the Whole of that Body.

On this Principle, the Inſtrument, being immerſed in Water, ſhould ſink to a given Point upon the Scale, and there remain ſtationary: but, as the ſpecific Gravity of Water is not every where the ſame, Mr. Richardſon, by his Invention of the Regulator, has rendered the Inſtrument correctly applicable to every Variety of Water; for, by drawing it outwards, or preſſing it inwards, till the Inſtrument ſinks to the required Point in the Water intended to be made uſe of, it then becomes the exact Repreſentative of that Water, and is fit for immediate Application.

The Inſtrument being ſo adjuſted, the Water is then the true Standard of Compariſon for our Experiments; and if on being immerſed in Wort it refuſes to ſink to the ſame Point to which it deſcended in Water, we are certain that the former is more denſe than

than the latter, by the Reſiſtance it makes to the deſcending Inſtrument; and that, if a Weight added to the Top of the Scale cauſes it to ſink to the Point intended, the Weight ſo added muſt be the Repreſentative of the ſpecific Gravity of the Wort, or of the Addition made to the Denſity of the Water by the Acceſſion of fermentable Matter; for that Part of the Fluid diſplaced by the Inſtrument is ſtill the ſame in Bulk, but of greater Denſity, becauſe the Part of the Inſtrument immerſed is of the ſame Magnitude, though the Inſtrument itſelf is increaſed in Weight, agreeably to the Theorem juſt quoted.

Circumſtances in which the SACCHAROMETER *may be of conſiderable Utility.*

I have already pointed out the Uſe of this Inſtrument in aſcertaining the Value of

Malts; but there are other Circumſtances attendant on the Uſe of it in brewing: one of theſe is, that diſagreeable Accident termed *ſetting the Goods*; which is, converting the Malt in the Maſh Tun into a Paſte, or clammy Conſiſtence, occaſioned by an injudicious Application of Heat in the Liquor firſt turned on the Malt, which ſhuts up the Pores of it, and cauſes a great Deficiency in both the Quantity and Quality of the Extract; in the Detection of which the Uſe of the Inſtrument is ſingularly advantageous.

The Occurrence of this Accident, *totally*, is not indeed frequent; but I apprehend that its *partial* Appearance is more common than many are apt to imagine.

If the Brewer eſtimates his Loſs by the Quantity deficient, or attempts to make good

good the Deficiency by an Addition of Water (on a Suppoſition that his Wort is ſtrong in Proportion to the Shortneſs of the Length, or Smallneſs of the Quantity extracted), he is egregiouſly wrong. The Inſtrument will ſhew him not only that his Quantity is leſs, but the Strength or Gravity of the Extract is alſo deficient; from the Diſcovery of which he will be enabled to guard againſt injuring the Reputation of his Beer, by a falſe Eſtimate of its Strength on that Occaſion, and will be prepared to provide for the Prevention, or Remedy, of ſimilar Accidents in future. The experienced Brewer will thence adopt a Practice productive of better Effects.

Mr. Richardſon gives an Account of an Accident, that came within his own Knowledge, of ſetting the Goods, through the Inattention of a Servant; wherein, by two

maſhings, adopted to produce the Length of one, the Gravity of the Wort, which ſhould have been thirty Pounds per Barrel, was only eleven; and ſtill the Quantity was ſomewhat leſs, being thirty-one inſtead of thirty-two Barrels: the Loſs, therefore, in the firſt Extract only, may be thus eſtimated :---

	lbs.
Firſt Wort ſhould have been 32 Barrels, at 30 lbs. per Barrel----------	960
Inſtead of which it was only 31 Barrels, at 11 lbs. per Barrel----------	341
Deficiency	619

Which divided by ſeventy-five Pounds, the average Amount of the fermentable Matter then extractable from a Quarter of Malt, the actual Loſs appears to be 8.25 Quarters of Malt.

Similar

Similar Accidents, though in a leſs waſte-ful Degree, no doubt, frequently occur, and paſs unnoticed, for the want of theſe or ſimilar Means of diſcovering them.

Again: the Saccharometer is particularly uſeful (indeed I know not how it can be diſ-penſed with) in the making up a Vat of Beer, even if filled by ſucceſſive Brewings. And, with regard to thoſe made up in the uſual Way, it is clear, that, without this or a ſimilar Aſſiſtance, the Party muſt be in utter Darkneſs, and perhaps being deprived of a conſiderable additional Profit, the Loſs of which may never be perfectly known.

It is very neceſſary to keep the Inſtru-ment clean, which is eaſily done, by plung-ing it, after every Experiment, in warm Water, and rubbing it with a Linen Rag,

or

or a Piece of ſoft Leather; recollecting, that the Ball will not bear rough Uſage: becauſe any Bruiſe which ſhall reduce the cubic Size of the Ball will not only render a freſh Adjuſtment neceſſary, but, by deſtroying the Relationſhip between the Inſtrument and its Weights, will render it uſeleſs till it is repaired.

Where you purchaſe your Inſtrument, Tables of Heat, Expanſion, and every other neceſſary Information for your Practice, will be given you.

LICENSING.

LICENSING.

AS this Treatiſe is intended, principally, for the Uſe of young Brewers, any Information that concerns them cannot but be acceptable.

LICENCES, granted at the general licenſing Day, ſhall be made for one Year only, to commence on the 29th of September: 26 Geo. II, C. 31, § 4. And Licences granted at a Petty Seſſions, where a Houſe has become unoccupied, ſhall be made till the next general licenſing Day: 29 Geo. II, C. 12, § 24.

By

By the 30th Geo. III, C. 38, from October 10, 1790, the recited Duties under former Acts to ceaſe, excepting Arrears and Fines; and from that Day, Licences granted to ſell Wine or Spirits by Retail are to be void. Perſons whoſe Licences ſhall be ſo voided, were to be allowed a rateable Proportion for the Time unexpired, on taking out new Licences.

From October 10, 1790, Retailers of Wine and Spirits are to take out Licences, if within the Limits of the chief Office of Exciſe in London, under the Hands and Seals of two or more of the Commiſſioners of Exciſe in England for the Time being, or of ſuch Perſons as they, or the major Part of them, ſhall appoint for that Purpoſe: but if in any Part of the Kingdom of England not within the ſaid Limits, under the Hands and Seals of the Collectors and Superviſors

Supervifors of Excife within their refpective Collections and Diftricts.

Perfons applying for Licences to pay as follow, viz.

	l	*s*	*d*
For every Licence to retail Foreign Wines in England, if the Party has not a Spirits or Beer Licence ----------	5	4	0
And if the Party has a Beer Licence, but not one for Spirits,-	4	4	0
If he has alfo a Spirits Licence---	2	4	0
For every Licence to retail Britifh made Wines in Great Britain--	2	4	0
For every Licence to retail Foreign Wines in Scotland, if the Party has not a Spirits or Beer Licence----------	3	6	8

If

	l	*s*	*d*
If he has a Beer Licence, but not one for Spirits	2	13	4
If he has alſo a Spirits Licence	1	6	8
For every Licence to retail Spirits in Great Britain, if the Party's Houſe is rated under 15*l*	4	14	0
If rated at 15*l* and under 20*l*	5	2	0
If rated at 20*l* and under 25*l*	5	10	0
If rated at 25*l* and under 30*l*	5	18	0
If rated at 30*l* and under 40*l*	6	6	0
If rated at 40*l* and under 50*l*	6	14	0
If rated at 50*l* or upwards	7	2	0

The Money for Licences is to be paid within the Limits of the chief Office of Exciſe in London, at the ſaid chief Office of Exciſe; and for Licences taken out in any Part of Great Britain, not within the ſaid reſpective Limits, to the reſpective Collectors of Exciſe granting ſuch reſpective Licences.

Licences

Licences are to continue in force until the 10th of October enſuing the granting thereof; and if granted between the 5th of April and the 10th of October, a rateable Proportion only is to be charged.

A TABLE

A TABLE

OF THE

Clear Duties of Excise on Strong Beer,

Payable by the Common Brewers of London and in the Country, with the Malt Allowances deducted from the original Duties.

Barrels.	l.	s.	d.
1	0	9	2
2	0	18	4
3	1	7	6
4	1	16	8
5	2	5	10
6	2	15	0
7	3	4	2
8	3	13	4
9	4	2	6
10	4	11	8
11	5	0	10

Barrels.	l.	s.	d.
12	5	10	0
13	5	19	2
14	6	8	4
15	6	17	6
16	7	6	8
17	7	15	10
18	8	5	0
19	8	14	2
20	9	3	4
21	9	12	6
22	10	1	8
23	10	10	10
24	11	0	0
25	11	9	2
26	11	18	4
27	12	7	6
28	12	16	8
29	13	5	10
30	13	15	0
31	14	4	2
32	14	13	4
33	15	2	6

Barrels.	l.	s.	d.
34	15	11	8
35	16	0	10
36	16	10	0
37	16	19	2
38	17	8	4
39	17	17	6
40	18	6	8
41	18	15	10
42	19	5	0
43	19	14	2
44	20	3	4
45	20	12	6
46	21	1	8
47	21	10	10
48	22	0	0
49	22	9	2
50	22	18	4
51	23	7	6
52	23	16	8
53	24	5	10
54	24	15	0
55	25	4	2

Barrels.	l.	s.	d.
56	25	13	4
57	26	2	6
58	26	11	8
59	27	0	10
60	27	10	0
61	27	19	2
62	28	8	4
63	28	17	6
64	29	6	8
65	29	15	10
66	30	5	0
67	30	14	2
68	31	3	4
69	31	12	6
70	32	1	8
71	32	10	10
72	33	0	0
73	33	9	2
74	33	18	4
75	34	7	6
76	34	16	8
77	35	5	10

Barrels.	l.	s.	d.
78	35	15	0
79	36	4	2
80	36	13	4
81	37	2	6
82	37	11	8
83	38	0	10
84	38	10	0
85	38	19	2
86	39	8	4
87	39	17	6
88	40	6	8
89	40	15	10
90	41	5	0
91	41	14	2
92	42	3	4
93	42	12	6
94	43	1	8
95	43	10	10
96	44	0	0
97	44	9	2
98	44	18	4
99	45	7	6

Barrels.	l.	s.	d.
100	45	16	8
200	91	13	4
300	137	10	0
315	144	7	6
320	146	13	4
330	151	5	0
340	155	16	8
350	160	8	4
360	165	0	0
370	169	11	8
380	174	3	4
390	178	15	0
400	183	6	8
450	206	5	0
500	229	3	4
550	252	1	8
600	275	0	0
650	297	18	4
700	320	16	8
750	343	15	0
800	366	13	4
850	389	11	8

Barrels.	l.	s.	d.
900	412	10	0
1,000	458	6	8
2,000	916	13	4
3,000	1375	0	0
4,000	1833	6	8
5,000	2291	13	4
6,000	2750	0	0
7,000	3208	6	8
8,000	3666	13	4
9,000	4125	0	0
10,000	4583	6	8

A TABLE

A TABLE

OF THE

Clear Duties of Excise on Table Beer,

Payable by the Common Brewers of London and in the Country, with the Malt Allowances deducted from the original Duties.

Barrels.	l.	s.	d.
1	0	1	10
2	0	3	8
3	0	5	6
4	0	7	4
5	0	9	2
6	0	11	0
7	0	12	10
8	0	14	8
9	0	16	6
10	0	18	4
11	1	0	2

Barrels.	l.	s.	d.
12	1	2	0
13	1	3	10
14	1	5	8
15	1	7	6
16	1	9	4
17	1	11	2
18	1	13	0
19	1	14	10
20	1	16	8
21	1	18	6
22	2	0	4
23	2	2	2
24	2	4	0
25	2	5	10
26	2	7	8
27	2	9	6
28	2	11	4
29	2	13	2
30	2	15	0
31	2	16	10
32	2	18	8
33	3	0	6

Barrels.	l.	s.	d.
34	3	2	4
35	3	4	2
36	3	6	0
37	3	7	10
38	3	9	8
39	3	11	6
40	3	13	4
41	3	15	2
42	3	17	0
43	3	18	10
44	4	0	8
45	4	2	6
46	4	4	4
47	4	6	2
48	4	8	0
49	4	9	10
50	4	11	8
51	4	13	6
52	4	15	4
53	4	17	2
54	4	19	0
55	5	0	10

Barrels.	l.	s.	d.
56	5	2	8
57	5	4	6
58	5	6	4
59	5	8	2
60	5	10	0
61	5	11	10
62	5	13	8
63	5	15	6
64	5	17	4
65	5	19	2
66	6	1	0
67	6	2	10
68	6	4	8
69	6	6	6
70	6	8	4
71	6	10	2
72	6	12	0
73	6	13	10
74	6	15	8
75	6	17	6
76	6	19	4
77	7	1	2

Barrels.	l.	s.	d.
78	7	3	0
79	7	4	10
80	7	6	8
81	7	8	6
82	7	10	4
83	7	12	2
84	7	14	0
85	7	15	10
86	7	17	8
87	7	19	6
88	8	1	4
89	8	3	2
90	8	5	0
91	8	6	10
92	8	8	8
93	8	10	6
94	8	12	4
95	8	14	2
96	8	16	0
97	8	17	10
98	8	19	8
99	9	1	6

Barrels.	l.	s.	d.
100	9	3	4
200	18	6	8
300	27	10	0
315	28	17	6
320	29	6	8
330	30	5	0
340	31	3	4
350	32	1	8
360	33	0	0
370	33	18	4
380	34	16	8
390	35	15	0
400	36	13	4
450	41	5	0
500	45	16	8
550	50	8	4
600	55	0	0
650	59	11	8
700	64	3	4
750	68	15	0
800	73	6	8
850	77	18	4

900

Barrels.	l.	s.	d.
900	82	10	0
1,000	91	13	4
2,000	183	6	8
3,000	275	0	0
4,000	366	13	4
5,000	458	6	8
6,000	550	0	0
7,000	641	13	4
8,000	733	6	8
9,000	825	0	0
10,000	916	13	4

NOTE.

NOTE.

	s.	d.
Quarter of a Barrel of Strong Beer--	2	3¼
Half ditto----------	4	7
Three Quarters ditto----------	6	10½

MALT DUTY.

Old Duty, per Buſhel----------	2	4
New ditto during the War----------	2	0

The Allowance for Waſte and Leakage is 3 out of every 36 Barrels.

DRAWBACKS.

	s.	d.
For every Barrel of Strong Beer or Ale, which ſhall be duly exported to Foreign Parts as Merchandize, and ſo in Proportion for any greater or leſs Quantity----------	13	11
Additional Drawbacks during the War----------	4	11
	18	10

BOUNTIES.

For every Barrel of Strong Beer or Ale, which ſhall be duly exported to Foreign Parts as Merchandize, when Barley is at Twenty-four Shillings per Quarter, or under----------	1	0

A GLOS-

A GLOSSARY

Of ſome of the Technical Terms made Uſe of in this Work.

ASTRINGENT---Binding.

PUNGENT---Heat on the Tongue, ſharp.

BALSAMIC---Unctuous, healing.

APERIENT---Gently Purgative.

DIURETIC---Having the Power to provoke Urine.

VISCID---Glutinous, ropy.

DETERGENT---That which cleanſes.

FEBRIFUGE---Good in Fevers.

ALEXIPHARMIC---That drives away Poiſon.

CATAPLASM---a Poultice.

REVERBERATORY FIRE---A Furnace of an intenſe Heat, where the Fire is reverberated upon the Matter to be melted or cleaned.

A RETORT---A Chemical Glaſs Veſſel to which the Receiver is fitted.

AROMATIC---Spicy, fragrant.

CARMINATIVE---Whatever has the Power to expel Wind.

ANTISEPTIC---An Antidote againſt Putrefaction.

PNEUMATIC---Conſiſting of Wind or Spirit.

CEPHALIC---

CEPHALIC---Medicinal for the Head.

ALKALI---Any Subſtance which, when mixed with Acid, produces Fermentation.

NARCOTIC---Producing Torpor or Stupefaction.

COKE---Fuel made by burning Pitcoal under Earth, and quenching the Cinders.

PHLEGMATIC---Dull, cold, frigid.

CRUDE---Harſh, unripe.

FARINACEOUS---Mealy.

To CAP ON---To put freſh Malt on the Goods.

GOODS---Malt when wetted, before the Virtue is extracted.

GRAINS---Huſks of Malt exhauſted in brewing.

MUSTY---Mouldy.

WEEVIL---A ſmall Inſect that infeſts Malt, and eats out its Flour.

FOXED---Tainted.

MUST---Unfermented Extracts of fermentable Subjects.

PHLOGISTON---A Chemical Liquor extremely inflammable.

INDEX.

INDEX.

A

Page.

Ale, London - - - - - - - - - - 65
Ale, Windſor - - - - - - - - - - 74
Ale, Welch - - - - - - - - - - 78
Ale, Wirtemberg - - - - - - - 82
Ale, Scurvy-graſs - - - - - - - 89
Amber Beer, or Twopenny - - - - 56
Alum - - - - - - - - - - - - 129

B

Brown Stout - - - - - - - - - - 46
Bean Flour Malted - - - - - - - 126
Bitters - - - - - - - - - - - - 118
Brewhouſe, Utenſils uſed in - - - 1

C

Colouring - - - - - - - - - - 116
Calamus Aromaticus - - - - - - - 119
Cocculus Indicus - - - - - - - - 117

Page.

Coriander - - - - - - - - - - 122
Capſicum - - - - - - - - - - - 122
Caraway Seed - - - - - - - - - 123

D

Directions for uſing Dring and Fage's Hydrometer, ſee Appendix.

E

Exciſe Duties payable - - - - - - 144

F

Fermentation - - - - - - - - - 104
Finings - - - - - - - - - - - 109

G

Ginger - - - - - - - - - - - - 124
Gentian - - - - - - - - - - - 121
Grains of Paradiſe - - - - - - - 123
Gloſſary - - - - - - - - - - - 159

H

Hock - - - - - - - - - - - - 86
Hops - - - - - - - - - - 21, 119
Honey - - - - - - - - - - - - 113
Heading - - - - - - - - - - - 108

Iſinglaſs

Page.

I

Iſinglaſs - - - - - - - - - - - 129

L

Liquorice, Stick - - - - - - - - 115
Liquorice, Spaniſh - - - - - - - 115
Licenſing - - - - - - - - - - 139
London Brewery, Hiſtory of - - - xv

M

Malt - - - - - - - - - - - - 111
Malt, how to make - - - - - - - 4
Malt, to know good from bad - - - 16
Malt (Pale) Nature and Uſe of - - 18
Malt (Amber) Nature and Uſe of - - 19
Malt (Brown) Nature and Uſe of - - 20
Moloſſes - - - - - - - - - - 114

O

Oyſter Shells - - - - - - - - - 127

P

Porter - - - - - - - - - - - - 25

Q

Quaſſia - - - - - - - - - - - 120

R

Reading Beer - - - - - - - - - - 53

Shipping

S

Page.

Shipping Beer - - - - - - - 98, 100
Sugar - - - - - - - - - - - - 113
Salt - - - - - - - - - - - - - 125
Salt of Tartar - - - - - - - - - 126
Saccharometer, Uſe of - - - - - - 131

T

Table Beer - - - - - - - - - - - 92

U

Vat, to make up one of 150 *Barrels to double its Value* - - - - - - - - 102
Vat, to bring ſeveral Sorts of Beers, mixed together, to one Taſte and Palate - - - - - - - - - - - 103

APPEN-

APPENDIX.

THE improved Hydrometer, with the Apparatus annexed to it, is made by Meſſrs. Dring and Fage, Mathematical and Philoſophical Inſtrument Makers to the Honourable Board of Exciſe, Tooley Street, Southwark. It unites Simplicity in Conſtruction and Uſe with the utmoſt Degree of philoſophical Accuracy.

It is ſimilar in Principle to the Saccharometer of Richardſon before mentioned, but it anſwers every Purpoſe to which that Inſtrument can be applied with two Weights only; and, by the Aſſiſtance of a Scale which accompanies it, aſcertains the Strength or Gravity of Worts at any required Degree of Heat, without the Uſe of Tables, or the more trou-

bleſome Method of reducing the Worts to one ſtandard Temperature.

The Facility with which the Knowledge of uſing this Inſtrument may be acquired, and the expeditious Mode of aſcertaining the Value of the Extract by it, are likewiſe ſtrong Recommendations in its Favour, for any one of ordinary Talents may learn the Method of applying it in a Quarter of an Hour.

The Uſe of the Hydrometer, Thermometer, or Saccharometer, in the Brewery, has, perhaps, very much contributed to the Improvements that have been lately made in the Art of brewing Malt Liquors; for, by taking Notes and comparing them, different Brewers are enabled to communicate their practical Modes of working in an eaſy Manner, and, conſequently, to adopt any improved

improved Plan which one may ſuggeſt to another. Indeed, the Advantages reſulting from the Uſe of theſe Inſtruments are ſuch, that their immediate Adoption cannot be too ſtrongly recommended to every one who has hitherto refrained from applying them to thoſe valuable Purpoſes.

The grand Obſtacle to Improvement in every Manufactory is the apparent Difficulty of introducing a new Mode of Practice, which is conſiderably increaſed, if the Workman has never ſeen the Machine or Inſtrument he is to uſe: but the great Utility of theſe Inſtruments to the Brewery, and the Simplicity of their Conſtruction, have overcome thoſe Prejudices; and it is found, that a Miller or Baker may as well be without a Pair of Scales, as a Brewer without thoſe Inſtruments.

As Meſſrs. Dring and Fage's Hydrometer is now become the Standard of Compariſon generally referred to, by the Brewers in Town, when ſpeaking of the Value of their Malt, or the Extract of it, the following Deſcription of the Apparatus, with the Method of uſing it, will be found extremely uſeful.

The

The Hydrometer is made of Brafs, of the Form repreſented in the Plate, Fig. 1. It conſiſts of a hollow Ball A, and a ſquare Stem *b c*, projecting from the upper Part of it, and a round Leg *d e*, with the weight W, at the Bottom:--the Wire *a*,

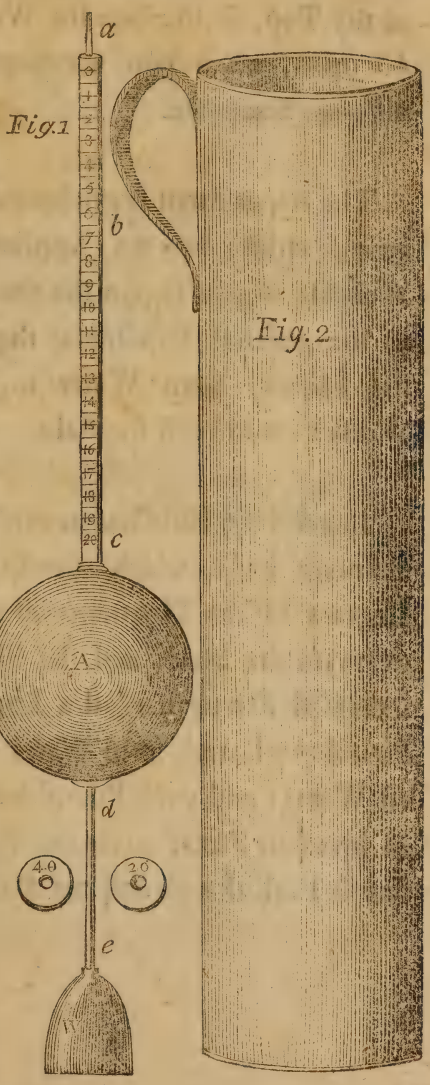

Fig. 1

Fig. 2

at

at the Top, is to place the Weights 20 and 40 upon, when you want your Worts of different Strengths.

The upper Stem is graduated into 20 Degrees, which, by the Application of two Weights on the Top of the Stem, aſcertains, to the greateſt Exactneſs, the Strength of the Liquor, from Water to the ſtrongeſt Worts ever brewed for Sale.

The ſliding Rule has at one End a Thermometer Scale, which correſponds with the Degrees of the Thermometer; and the Figures on the Stock and the Slide ſhew the increaſed Strength of the Liquor at every Pound per Barrel, from Water to the ſtrongeſt Worts; and each Pound being ſubdivided into four Parts, gives the Strength to the fourth Part of a Pound per Barrel.

DIRECTIONS FOR ITS USE.

Having taken a Jar of the Worts, immerſe the Thermometer therein, obſerving the Degree of Heat: ſuppoſe it 73; then move the ſliding Rule thereto, by ſetting the Star to 73 on the Thermometer Scale, which is divided at every two Degrees; then immerſe the Hydrometer therein, and if it floats with Part of the upper Stem immerſed, without any Weight on the Top, obſerve what Figure thereon is even with the Surface of the Liquor: ſuppoſe 16; then look at 16 on the Stock of the Rule, and you will find it correſponds with 16½ on the Slide, which ſhews thoſe Worts to be ſixteen Pounds and a Half per Barrel ſtronger than Water.

EXAMPLE II.

Suppoſe the Heat 88; ſet the ſliding Rule as before at 88, and ſhould the Hydrometer float

float therein, up to the Ball, apply the Weight No. 20 on the Top: ſuppoſe it ſhould float with that Weight to 7 on the Stem, adding the Weight thereto makes it 27; then look on the other Side of the Rule for 27 on the Stock, and you will find it correſpond with 28¼ on the Slide; ſhewing thoſe Worts to be 28 Pounds and a Quarter per Barrel ſtronger than Water.

EXAMPLE III.

Suppoſe the Heat 100, and the Hydrometer requires the Weight No. 40, which ſhould float the Stem to 2½, which with the Weight at Top is 42½; having ſet the Rule at 100, look for 42½ on the Stock, and you will find it correſpond with 45 on the Slide, and thoſe Worts are 45 Pounds per Barrel.

Theſe Examples will ſuffice to ſhew the Utility of its Application to any other Degree of Heat or Strength.

The

The Thermometer, which forms a Part of the Apparatus, and which is packed in the ſame Mahogany Box with the Hydrometer and Scale, is abſolutely neceſſary where the Brewer has none but the common large ones uſed for taking the Liquor in the Copper, &c., which are generally too bulky to be admitted into an Aſſay Jar: they are likewiſe equally uſeful for taking the Heat of the Worts in the Coolers, &c.

Fig. 2 is a Repreſentation of an Aſſay Jar, for examining the Gravity and Heat of your Worts at the ſame Time. It is made of Copper or Tin. Three of theſe Jars will be found neceſſary to contain your different Extracts; a Specimen of each of which ſhould be kept until you pitch your Tun.

Fig. 3

Fig. 3 is a Repreſentation of a common Brewer's Thermometer, in a Tin Caſe. The Uſe of this Inſtrument having been ſo fully explained already, and being pretty generally known, little need here be ſaid about it.

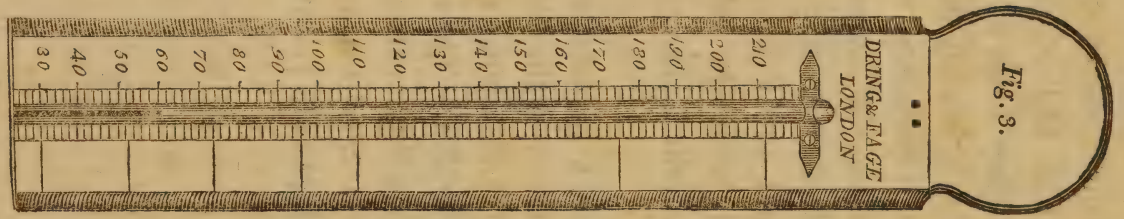

Fig. 3.

Fig. 4 is a blind Thermometer, with a Pocket Scale: it is uſeful in many Reſpects, particularly when it is deſirable to keep your Heats a Secret. A B is a Pocket Scale, graduated to the Thermometer Tube: if the Notch *c* be placed againſt the Baſs Pin *d*, and laid along by the Side of the Tube, the Diviſion on the Scale oppoſite the Quickſilver will ſhew the Degree of Heat.

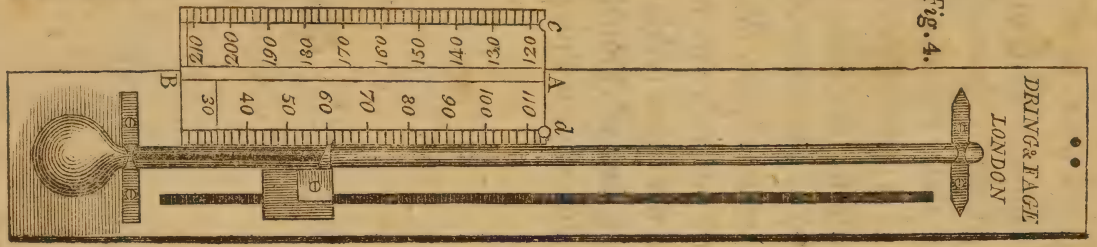

Fig. 4.

If you want to turn over your Liquor at 165 Degrees, for Inſtance, and wiſh to employ yourſelf on ſome other Buſineſs, having one of theſe Thermometers, you need not ſtand at the Side of the Copper to watch it, but may fix the Index (which ſlides in a Groove) to 165 on the Scale, and leave any one of your ordinary Workmen to take your Liquor, and turn over when the Quickſilver riſes to the Index: this will ſave the Brewer a great deal of Trouble, and prevent the Diſcloſure of your Proceſs.

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